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Economic Commission for Europe

Conference of European Statisticians

Sixty-third plenary session
Geneva, 15–17 June 2015
Item 8 of the provisional agenda
Selection of topics for seminars to take place during the 2016 CES plenary session

Selection of topics for the seminars to be held during the 2016 plenary session of the Conference of European Statisticians

Note by the Secretariat

Summary

In May 2015, UNECE carried out an electronic consultation with the members of the Conference of European Statisticians on the possible topics for the seminars to be held during the 2016 plenary session of the Conference. The list of topics sent for consultation is provided as Annex I. The list has been regularly updated, based on the proposals from countries and recommendations by the Bureau. The list of seminars held since 2009 is provided as Annex II.

A total of 42 countries and international organisations replied to the consultation. They were invited to select topics for seminars and indicate whether their office would be willing to organise a seminar/session and/or prepare a paper on a specific topic.

The present note provides a summary of the replies received. Based on the outcome, the Bureau will make a proposal to the Conference for a decision on the 2016 seminar topics to be taken on 17 June 2015 under agenda item 8.

GE.15-10971 (E)

1510971

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I. Introduction

1. This year 41 countries or international organisations sent their proposals for topics to be discussed at the seminars of the 2016 plenary session of the Conference of European Statisticians (CES). The following countries and international organizations (IOs) replied to the electronic consultation: Armenia, Australia, Austria, Azerbaijan, Belarus, Canada, Croatia, Cyprus, Czech Republic, Denmark, Finland, France. Germany, Hungary, Israel, Japan, Kazakhstan, Latvia, Lithuania, Mexico, Moldova, Netherlands, Norway, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, Turkey, Ukraine, United Kingdom, United States, Eurasian Economic Commission, Eurostat, Interstate Statistical Committee of the Commonwealth of Independent States (CIS-STAT), Organisation for Economic Cooperation and Development (OECD), United Nations Educational Scientific and Cultural Organization (UNESCO) and International Monetary Fund (IMF).

2. The results of the consultation are presented below. The countries and organizations that offered to organize a seminar/session or to present a paper are listed under each topic.

II. Results of the survey: preferences

Topic (F) Strategic partnerships

3. The topic received the highest number of preferences: 25 votes (24 from countries and 1 from an IO).

4. Contributions offered on this topic:

Seminar/Session organizers: Canada, Mexico, Russian Federation (possibly), United States

Papers: Netherlands, Russian Federation, Slovenia, Sweden, United States

5. **Comments made:**

The United States paper might focus on how statistical offices create environments to encourage third parties to add value to statistical products, as well as taking stock of these partnerships.

Topic (G) Geospatial information services based on official statistics

6. The topic received 16 votes from countries.

7. Contributions offered on this topic:

Session organizer: Slovenia, Sweden (possibly)

Papers: Denmark, Netherlands, Slovenia, Sweden

8. **Comments made:**

Netherlands commented that this is a hot topic that attracts much national and international attention. This work is done with partners and often big data has a geographic component.

Topic (E) Sustainable development goals, Vol.2: how to implement the SDG monitoring system

9. The topic received 15 votes (13 from countries and 2 from IOs).

10. Contributions offered on this topic:

Session organizers: Russian Federation (possibly), IMF (possibly)

Papers: Azerbaijan, Denmark, Netherlands, Russian Federation, United States, IMF (possibly), UNESCO

11. **Comments made:**

The United States paper might focus on coordination of SDG monitoring at national level, partnerships with other data producers, and how to address sample size concerns when disaggregating data for SDG monitoring.

UNESCO could provide a paper from the perspective of the Sustainable Development Goal 4 and other targets related to education and training based on the recommendations and follow-up proposals to be presented at the World Education Forum in 2015.

Topic (D) Measuring global and transboundary issues in official statistics

12. The topic received 12 votes (10 from countries and 2 from IOs).

13. Contributions offered on this topic:

Session organizers: Israel, Mexico

Papers: Israel, Netherlands

Topic (A) Measuring Governance

14. The topic received 8 votes (7 from countries and 1 from an IO).

15. Contributions offered on this topic:

Seaminar/Session organizer: Mexico, OECD (possibly)

Papers: Hungary, OECD

Topic (C) Gender statistics in light of Beijing +20

16. The topic received 8 votes (6 from countries and 2 from IOs).

17. Contributions offered on this topic:

Papers: Lithuania, Netherlands, UNESCO

18. **Comments made:**

UNESCO could contribute a paper based on the project "Improved Measurement of Gender Equality in Science, Technology, Engineering and Mathematics" that the UNESCO Institute for Statistics (UIS) is currently running with the financial support of the Swedish Government.

Topic (B) Climate change-related statistics

19. The topic received 3 votes from countries.

20. Contributions offered on this topic:

Seminar/Session organizer: Mexico, the UNECE Steering Group on Climate Change Related Statistics

Papers: Netherlands, Canada

21. **Comments made:**

Netherlands takes part in the UNECE Steering Group on Climate Change-Related Statistics and in the UNECE Task Force to establish indicators also based on the System of

Environmental-Economic Accounts. On 2-3 September 2015, an expert forum will be held in Geneva. This will be repeated in the autumn of 2016 and / or the fall of 2017. To dedicate a seminar on the topic as part of CES might be a welcome addition.

III. Conclusions

22. The CES Bureau will discuss the results of the electronic consultation and will present a proposal to the Conference on the 2016 seminar topics. The Conference will decide about the topics on 17 June 2015 under agenda item 8.

Annex I

List of possible topics for the seminar at the 2016 CES plenary session

The following list of possible topics for the seminar at the 2016 CES plenary session was circulated to countries and international organizations for consultation:

A. Measuring governance;

B. Climate change-related statistics;

C. Gender statistics in light of Beijing+20;

D. Measuring global and transboundary issues in official statistics;

E. Sustainable Development Goals, Vol.2: how to implement the SDG monitoring system;

F. Strategic partnerships in producing official statistics;

G. Geospatial information services based on official statistics.

Annex II

Seminars of the Conference of European Statisticians held since 2009

2009 1. Balancing principles of professional autonomy and accountability with the mandate to produce policy relevant data

2. Strategic issues in business statistics

2010 1. Spatial statistics

2. Impact of global crises on statistical systems

2011 1. Organization of data collection and sharing, and the management challenges for the implementation of SDMX

2. Measuring human capital

2012 1. Implementing the fundamental principles of official statistics, including issues related to coordination of national statistical systems

2. Challenges for future population and housing censuses (based on lessons learned from the last round)

2013 1. Challenges in implementing the system of environmental-economic accounting (SEEA) and measuring sustainable development in follow up to Rio+ 20

2. Challenges in providing access to micro-data for research purposes

2014 1. What is the value of official statistics and how do we communicate that value?

2. Migration statistics

2015 1. Response by official statistics to the Sustainable Development Goals

2. Modernisation of statistical production and services and managing for efficiency

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Conference of European Statisticians

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Item 9 of the provisional agenda
Election of the Conference of European Statisticians Bureau

Election of the Bureau of the Conference for the 2015/2016 and 2016/2017 period

Note by the Secretariat

Summary

In accordance with the Rules governing the work of the Conference of European Statisticians and its Bureau (see ECE/CES/2007/8), the Conference elects its Bureau for a period of two years. The current term of all members of the Bureau of the Conference expires at the closing of the 2015 plenary session, on 17 June 2015. Elections for a Chair and for the Vice-Chairs will be held at the 2015 plenary session for the two-year period from June 2015 to June 2017.

The present note explains the procedure for the elections of the new Bureau. The elections will be carried out on 17 June 2015 under item 9 of the agenda.

GE.15-10386 (E)

1510386

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1. The current term of all members of the Bureau of the Conference of European Statisticians (CES) expires at the closing of the 2015 plenary session, on 17 June 2015. At the 2015 plenary session, elections for a Chair and for the Vice-Chairs will be held for the two-year period from June 2015 to June 2017.

2. In addition to the elected members of the Bureau, representatives of some international organizations active in statistics participate as permanent observers on the Bureau as stated in the Rules paragraph 14 (a): "Standing invitations are extended to the Director-General of Eurostat, the Chief Statistician of the Organisation for Economic Co-operation and Development (OECD), the Chairman of the OECD Committee on Statistics, the Chairman of the Interstate Statistical Committee of the Commonwealth of Independent States (CIS-STAT), the Director of the International Monetary Fund (IMF) Statistics Department and the Director of the Development Data Group of the World Bank. The Director of the United Nations Statistical Division is invited to participate in Bureau meetings as a representative of the United Nations secretariat."

3. The elections of the Bureau are governed by the rules adopted by the Conference at its 1991 plenary session and reconfirmed with minor amendments in 2005. These rules are provided in the document ECE/CES/2007/8.

4. As explained in paragraph 13 (a) of the Rules governing the work of the Conference and its Bureau (see ECE/CES/2007/8), "any member of the Conference is eligible for membership in the Bureau of the Conference". A member in the Conference is defined in the Rules, paragraph 5, as "the Head of the statistical service of any member country of the United Nations that participates regularly in the work of the United Nations Economic Commission for Europe".

5. It is thus possible for the Head of the statistical service of a country outside the United Nations Economic Commission for Europe (UNECE) region to be a member of the Conference, and to be elected to its Bureau. According to the Rules, paragraph 13 (b), the size of the Bureau can be up to 8 members, of whom 6 members should be from countries in the UNECE region. The remaining one or two members could potentially be from countries in other United Nations regions to ensure synergies of work and exchange of knowledge and experience.

6. The Bureau currently consists of the following persons, who were elected at the 2013 plenary session, or co-opted by the Bureau later to replace Bureau members who left the post of the Head of office and could no longer serve on the Bureau:

Chairman: Mr. W. Smith (Canada), first term as the Chairperson, and second term as the Bureau member;

Vice-Chairs: Mr. K. Pesendorfer (Austria), first term;

Ms. M. Bruun (Finland), first full term (Ms. Bruun was co-opted in November 2012);

Mr. E. Sojo Garza-Aldape (Mexico), second term;

Mr. B. Aydemir (Turkey), first term;

Mr. J. Pullinger (the United Kingdom), co-opted in October 2014;

7. Three Bureau members left the Bureau before their terms had expired: Mr. B. Pink (Australia), Ms. J. Matheson (the United Kingdom) and Mr. O. Osaulenko (Ukraine). Mr. J. Pullinger (the United Kingdom) was co-opted to replace Ms. J. Matheson (the United Kingdom) in October 2014.

8. According to the Rules paragraph 16 (c), the "Chairman of the Conference may be re-elected once. Any previous Chairman may be re-elected Chairman after an interruption

of at least two years". The current Chairman has served one term, and therefore, Mr. W. Smith can be re-elected as a Chairman of the Conference.

9. According to the Rules paragraph 15 (d), "Bureau members can be elected to four successive Bureaus" and "any previous Bureau member can be re-elected to the Bureau after an interruption of at least two years". Therefore, all Vice-Chairs of the current Bureau whose term of office expires in June 2015 are eligible to be re-elected. Furthermore, all members of the Conference who previously served as Chairs or Vice-Chairs, are also eligible to be re-elected as members of the Bureau.

10. There are no formal nominations for Bureau membership. Paragraph 15 (a) of the Rules provides for the elections to the Bureau to be organized by "the most senior previous Chairman of the Conference present at the plenary session concerned". Ms. K. Wallman, Chief Statistician of the United States, is the most senior previous Chairman of the Conference and, therefore, she will be in charge of organizing the elections of the Bureau. The proposal will be prepared in consultation with all the CES members, so that "it maximises the chances of being adopted by consensus" (paragraph 15 (a) of the Rules).

11. Elections for the Chair and Vice-Chairs for a period of two years will be held on Wednesday, 17 June 2015 under item 9 of the CES plenary session agenda.

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Conference of European Statisticians

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Response by official statistics to the Sustainable Development Goals

The role of national statistical offices pertaining to measuring sustainable development

Note by the National Institute of Statistics and Geography (INEGI), Mexico

Summary

The paper introduces the experience of the National Institute of Statistics and Geography of Mexico in dealing with Millennium Development Goals and indicators, and then further with the setting up of the Post-2015 Development Agenda and the related Sustainable Development Goals. The paper discusses the role of the international statistical system and that of the national statistical office in moderating the work on the Sustainable Development Goals and indicators.

The paper is presented for discussion to the Conference of European Statisticians' first session of the seminar "Response by official statistics to the Sustainable Development Goals".

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1506617

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I. Introduction

1. When the Millennium Development Goals (MDGs) and indicators were defined, few people in the world knew what they were about, and fewer people were interested. Moreover, it may be that even some governments that had endorsed the Millennium Declaration stopped paying attention even before the initial 48 MDG indicators were published.

2. Unlike the Millennium Declaration, the new agenda, still known as the Post-2015 Development Agenda, has aroused much interest among the various stakeholders. The countries decided that this new process should be bottom-up. In recent years, there have been many studies, meetings, consultations, assessments and intensive negotiations among various public and private actors, academia, civil society and international organizations, to delineate that agenda and to give it a universal and aspirational character. One important actor in this process is the Open Working Group on Sustainable Development Goals (SDGs), whose proposal has been the basis of the current negotiations. This will be the global agenda to which all Member Countries of the United Nations will be committed.

3. Recognizing the results and advances that were obtained with MDGs, it is clear that there are still many unresolved issues. Therefore, the Post-2015 Agenda has focused on sustainable development and has taken up issues that did not have sufficient visibility in MDGs, such as equity, inclusive society and economy, climate change, among others. The Post-2015 Agenda is also addressing new issues, such as human rights, good governance and justice. Similarly, it considers other dimensions of social progress, beyond material living conditions.

4. At the same time, the world has seen a rapid development of information technology and communications offering new possibilities to verify the extent to which progress is being made in meeting the new goals and targets. The Data Revolution provides a new tool for monitoring the new global development agenda. It involves not only the use of new data sources, but also the actions for capacity building for tracking targets and goals and the principles of transparency and open data.

II. The statistical community

5. The expectations to national statistical systems are mainly derived from the governments as users of data for policy making, but also increasingly from the civil society through observatories to follow up particular phenomena such as the evolution of maternal mortality, inequality, poverty, or the gaps in access to the information technologies, etc.

6. The experience in dealing with MDGs and indicators has had a positive effect on many users of official statistics, and has raised their expectations to the deliverables from national statistical offices (NSOs) for monitoring the Post-2015 Development Agenda.

7. To meet the upcoming expectations, NSOs should start working on several fronts: first, with the coordination of the statistical system and, second, with the quality of statistics. NSOs, as heads of national statistical systems, should establish a general framework to assure the quality of data and indicators to be provided for monitoring the Post-2015 Development Agenda. Third, NSOs should engage in innovative use of data sources, new methodologies for data modelling and building human capabilities through acquiring new skills and knowledge. It will be important to establish sustainable partnerships with the private sector and the academia, since the monitoring will require also their expertise to ensure proper use of new data sources. These partnerships are to be based on very concrete road maps leading to the production of data that are complementary to official statistics. Fourth, surveys will still be important, and in countries where surveys are

irregular or non-existent, resources should be assigned to establish, strengthen and sustain survey programs, both to households and to establishments.

8. For NSOs to be able to coordinate the statistical system and play the role of a leader of official statistics in the country, there should be a two-way engagement with the government: first, to obtain the highest political support for the statistical activity while at the same time maintaining their professional independence; and second, the delivery from the statistical office of high quality, timely data and indicators.

9. The Data Revolution needs to go beyond the statistical community and be a part of the countries' national debate concerning the development agenda of the next decades. The debate would include public and private players, national agencies and international organizations, as well as the civil society, and the aim should be to put in place a national statistical system that rises to the expectations of society.

10. The political process currently proposes 17 SDGs and 169 targets for monitoring, and countries have shown great interest in preparing for the monitoring work. Countries want to be sure that a clear, objective and timely measurement is made for each goal. In other words, the political process to agree on the final Development Agenda includes the technical decisions that should be taken by the international statistical community. This situation has put the official statistics, globally and nationally, in a position of high visibility, with high expectations and great responsibility.

11. It should be emphasized that in this process, the statistical community is not involved in policy decisions, particularly in the definition of objectives and targets. However, it is in a position to offer technical advice to arrive to a set of indicators that allows better monitoring and clearly communicates to society how progress is made in achieving the goals and targets.

III. National statistical offices

12. What is the role of national statistical offices in the development and monitoring of the Post-2015 Development Agenda?

13. At the time when MDG indicators were defined, statistical offices mainly from developing countries were not involved in the processes, led by national authorities. In some countries the statistical office was included in the monitoring work, but only with marginal participation.

14. One reason might be that some of these statistical offices lacked the knowledge, resources and ability to produce or integrate data that was often generated in other departments. They did not have the technical authority to guide the monitoring process. In addition, in some cases the statistical office was not strong enough to bring to the table other producers of information and guide the application of technical standards and norms.

15. A statistical office needs to show leadership in different fields of official statistics to play an active role in the collection, production and dissemination of data, and to maintain a position of active dialogue with decision makers. This leadership has to be shown from the strengthening of traditional statistical production programs all the way to methodological innovation and application of new tools for using and communicating information. The upcoming monitoring work might be an occasion for some statistical offices to improve their national standing.

IV. Activities in Mexico

A. Coordination

16. Considering the wide range of topics to be covered by the SDGs and targets, it is important to strengthen the coordination capacity of statistical offices.

17. One element needed to strengthen coordination is the capacity of the statistical offices to issue and monitor standards and recommendations for the generation and integration of statistics; another is the capacity to summon the members of the national statistical system to act in line with the Fundamental Principles of Official Statistics and best practices in statistics.

18. In the case of Mexico, although reports for the monitoring of MDGs were published both in 2005 and 2006, it was not until 2010 that a coordination committee was established by INEGI in accordance with the provisions of the Law of the National System of Statistical and Geographic Information (SNIEG). This law clearly defines authority and responsibilities to develop and implement work programs for the integration of the MDG indicators, review the quality attributes of statistics and indicators, and present the results publicly.

19. In Mexico, a coordination committee was formed as a result of a decision of the statistical authority in collaboration with the government. During the formation of the committee, it was decided that the chair would be the Office of the Presidency of the Republic (OPR) given the crosscutting nature of MDGs. INEGI participated as technical secretary with the responsibility of reviewing the data sources, methods, indicators and the integration of metadata and provision of a website to disseminate the information. The committee is composed of the heads of statistical divisions of line ministries and other relevant government agencies. This coordination mechanism has also served in the move towards the Post-2015 Development Agenda benefiting from the synergies created during the last five years.

20. The fundamental questions during the planning of the Post-2015 Development Agenda were: How can we lead the national debate on sustainable development? What contribution can be made to the discussion of the Post-2015 Development Agenda at the international level, and how can we insert ourselves into this global debate?

21. Considering the thematic scope of the Post-2015 Agenda, the first action was to broaden the participation in the committee by incorporating new actors that now have direct responsibility towards public policy and monitoring.

22. OPR organized a worksnop in February 2014 on public policy and inclusive economic and social development. Representatives of international organizations, civil society organizations, the academia and government ministries participated in the workshop to share their views on social and economic inclusion in order to address the structural causes of poverty, exclusion and inequality.

23. This workshop resulted in a first list of indicators linked to social and economic inclusion. The list contained 270 possible indicators. In successive analyses those indicators were mapped to existing proposals at the international level, such as MDGs and the Sustainable Development Solutions Network's suggested list. These indicators were proposed as a first possible set of indicators for monitoring social inclusion.

24. While the government of Mexico has actively participated in the Open Working Group and other forums, a statistical pilot test is being organized by OPR, Ministry of Foreign Affairs, UNDP and INEGI. This exercise is called "Project for defining social inclusion indicators for the Post-2015 Development Agenda" and its objective is to develop

a conceptual framework for social inclusion as the foundation of the definition of relevant indicators. The participants for this meeting are members of the committee, INEGI, the academia and UN agencies in Mexico.

B. Relationship between public policy and official statistics: understanding

25. One issue that has been addressed in different forums is the relationship between those who take public policy decisions and those responsible for the statistical measurement. From the official statisticians' point of view, the basis of the relationship with decision makers is to listen, understand and grasp their information needs while maintaining professional independence regarding how to produce these statistics. The good relationship between politicians and statisticians requires building of understanding and a two-way communication.

26. For example, the negative assessment on the feasibility of an indicator might be perceived and interpreted by the decision-maker as a rejection, not of the indicator itself, but of its proposed policy. Similarly, those who are in the public policy arena may request indicators without much or any consideration on the availability, quality and sustainability of the basic data needed.

27. For INEGI it has been essential first, to understand the government's information needs, as the main user; second, to explain very clearly what can be done and what cannot be done and with what time horizon and regularity data can be provided. The programming of statistical activities aligned with the National Development Plan seeks to ensure good communication between both parties.

C. Review the information sources

28. In Mexico, administrative records are the least developed data source. Thus, in the process of integrating and reviewing MDG indicators one lesson is that government agencies must conduct with statistical rigor when working with administrative data. This is important because a substantial set of SDG indicators may be calculated from administrative records.

29. The behaviour of the indicators over time and their correlations with other indicators have been valuable to ensuring the quality. Confronting different data sources for the same topic has been very helpful. For example, the methodological analysis of a particular indicator of water, produced by one agency, found the indicator methodology to be weak, so that indicator was rejected and replaced with another from a different source and agency.

30. A major challenge in the production of information is the breakdowns. The assessment of the list proposed by the United Nations Statistics Division shows that it is very demanding to provide the breakdowns for indicators that seek to identify segments of population to whom address adequate public measures. When the information comes from censuses or administrative records with total coverage, it will be relatively easy to generate these breakdowns. When data come from sample surveys, usually household surveys, the breakdowns will require large sample sizes and will probably be unsustainable due to the related costs. In such cases modelling could be an answer. Using statistical tools that offer the best possible estimates with existing data is a path that INEGI will be exploring.

D. New data sources and emerging issues

31. Another possible solution is the use of new data sources. INEGI has been working for over a year in data mining of social networks, especially Twitter. With new technology and statistical modelling tools we have produced interesting results on as different matters

such as subjective well-being, people's mobility and tourism, among other issues, using the Twitter database. While the work is still experimental, it is considered to have potential. INEGI has established a partnership with research centres in statistics, mathematics and computer science to explore these possibilities. Mexico also participates in several working groups that have been created by the United Nations Statistics Division. The World Bank and Mexico are co-chairs of the Task team on Big Data and SDGs.

32. As for emerging issues, human rights as well as government, public safety and justice, there are already institutionalized projects generating statistics and indicators in coordination with the respective authorities. In particular, one could mention the Government, Public Safety and Justice Censuses, which are conducted in collaboration among different agencies and federal, state and municipal authorities.

33. Additionally, INEGI recently began measuring subjective well-being in accordance to the recommendations developed by OECD. In January 2012, a module on self-reported subjective well-being was carried out as part of a national survey on household spending. In 2014, a similar module was conducted along with the national survey on income and expenditure which can generate information based on a geographical breakdown. Also, a smaller module on subjective well-being is conducted along with the survey on consumer confidence on a quarterly basis.

E. Promoting the use of information

34. For the SDG monitoring it is expected that our current web platform, through which we have published the Mexican Reports on MDGs progress, will be updated. It will include a major component of geographical disaggregation.

35. Probably one of the biggest challenges faced by any NSO is that more and more people will use official statistics. In Mexico it is a challenge as well. The strategy has aimed at harnessing the technological means available, specifically trying to meet the needs for different profiles of users. We are already using traditional media, such as mass radio and television communication, and this use needs to be expanded to new channels, such as social networks. Another approach is engaging in direct dialogue with students and teachers, the private sector and the organizations of the civil society.

V. Conclusions

36. The following recommendations can be made as a synthesis of the previous sections:

(a) Demonstrate technical leadership in the field of official statistics;

(b) Strengthen NSO's role as coordinator of the national statistical system, involving not only the government but also the private sector, the academia and civil society organizations;

(c) Establish coordination mechanisms promoting fluent communication and smooth understanding with the authorities responsible for public policies;

(d) Program statistical and geographical activities so that they are aligned with the government's national development priorities;

(e) Carry out research and innovate in the development and application of new methodologies in collaboration with the academia, further strengthen the capacity of the NSO's staff;

(f) Exploit the potential offered by the geographical information for the production and dissemination of statistical information;

(g) Strive for innovation in the application of new information technologies to better communicate statistical and geographical information;

(h) Investigate and explore the potential of new sources of data, including Big Data, in partnership with research centres.

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Response by official statistics to the Sustainable Development Goals

Bridging the gap: Integrating the measurement of Sustainable Development Goals with existing statistical frameworks

Note by the Statistics Netherlands

Summary

The paper focuses on the importance of having a framework for the measurement of Sustainable Development Goals to ensure a broader view on sustainable development. If only relying on what policy makers consider as important, the risk of underrepresenting some relevant areas would be high. The paper will also discuss the importance of measuring social capital and the necessity to establish a link with the System of National Accounts and the System of Environmental-Economic Accounting.

The paper is presented for discussion to the first session of the Conference of European Statisticians' seminar "Response by official statistics to the Sustainable Development Goals".

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1507027

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I. Introduction

1. During the last decades the number of measurement systems in the field of sustainable development has increased considerably. The Rio+20 Conference has resulted in a new momentum, as the ambition has been formulated in the Post-2015 Development Agenda to arrive at global Sustainable Development Goals (SDGs), which should replace the Millennium Development Goals (MDG). One of the lessons learnt from the MDG experience is that due attention should be paid to the measurability of the goals and targets. At the moment a tentative list of SDGs and targets has been compiled as an outcome of a political process that was carried out through the Open Working Group on Sustainable Development Goals (OWG). These targets are linked to a long list of proposed indicators. The statistical community is now confronted with the task to integrate the more than 300 separate indicators into one, comprehensive framework.

2. As there are already numerous ways to measure sustainable development, the question is whether we need more or less measurement systems. When considering the success of the System of National Accounts (SNA), one of its key factors of success is that at an early stage there was convergence toward one statistical standard which was adopted by a large number of countries. The Post-2015 Agenda offers a similar possibility to foster a further convergence of measurement methods for sustainable development.

3. In the light of the limited amount of time and capacity in terms of resources that the statistical community has at its disposal, a pragmatic approach is needed to arrive at a consistent and manageable framework for measuring sustainable development. Instead of reinventing the wheel, it makes more sense to align different measurement initiatives that have proven to be successful. This paper argues that an alignment of the proposed SDG indicators, with the frameworks as put forward in the *Conference of European Statisticians (CES) Recommendations for Measuring Sustainable Development*[1] and in the *System of Economic and Environmental Accounting (SEEA)*[2] is such a pragmatic and sound way to arrive at a new SDG indicator system to monitor the goals and targets as formulated in the Post-2015 Agenda.

4. The CES Recommendations are the outcome of the UNECE/Eurostat/OECD Task Force for Measuring Sustainable Development. The Recommendations which have now been endorsed by about 65 countries, proposes a flexible framework and an indicator system consisting of 90 indicators for 20 themes of sustainable development. Special attention is paid to the quality of life or human well-being "here and now", "later" (focusing on the amount of assets left for future generations) and "elsewhere" (the pressure that the generation of well-being in one country puts on the rest of the world).

II. Mapping Sustainable Development Goals indicators with the Conference of European Statisticians' framework

5. In this paper the proposed SDG indicators have been compared with the outcome of the CES Recommendations. The SDG indicators used in this paper are

[1] See: http://www.unece.org/publications/ces_sust_development.html
[2] See: http://unstats.un.org/unsd/envaccounting/seea.asp

derived from the assessment of proposed preliminary indicators for the Post-2015 Development Agenda, as presented by the United Nations Statistics Division for consultation with national statistical offices in February 2015.

6. Table 1 presents the small set of indicators as presented in the CES Recommendations and gives information about the number of countries for which internationally comparable data are available. Besides, a possible link with the MDG indicators is provided (the numbers of MDG indicators are provided in

http://mdgs.un.org/unsd/mdg/Host.aspx?Content=Indicators/OfficialList.htm).

Table 1

Small set of indicators presented in the CES Recommendations: global coverage and the link to MDG indicators[3]

Theme	*Indicator from CES Recommendations*	*Alternative indicator worldwide*	*Worldwide availability (no. of countries and areas)*	*Source*	*Relevant MDG indicators*
TH1. Subjective well-being	Life satisfaction		135	World Happiness Database	
TH2. Consumption and income	Final consumption expenditure		210	United Nations	1.4
	Official Development Assistance (ODA) paid	Official Development Assistance (ODA) received	143	World Bank	8.1-8.5; 8.9
	Income inequality	Share of poorest quintile in national consumption	134	United Nations (MDG database)	1.1; 1.2; 1.3; 1.6
	Gender pay gap		68	United Nations	3.1-3.3
TH3. Nutrition	Obesity prevalence	Malnutrition prevalence	160	United Nations	1.8; 1.9
TH4. Health	Life expectancy at birth		185	United Nations	4.1- 4.3; 5.1-5.6; 6.1-6.10; 7.9
TH5. Labour	Employment rate		145	United Nations	1.5; 1.7
TH6. Education	Educational attainment		184	United Nations	2.1-2.3
TH7. Housing	Living without housing deprivation	Urban population in slums	91	United Nations (MDG Database)	7.10
TH8. Leisure	Leisure time		20	Multinational Time Use Survey Database	
TH9. Physical Safety	Death by assault/ homicide rate		186	United Nations	

[3] http://www.unece.org/publications/ces_sust_development.html, Table 5, p. xxviii

TH10. Land and ecosystems	Bird index	Bird species threatened	214	World Bank (WDI)	7.1; 7.6, 7.7
TH11. Water	Water abstractions		93	United Nations	7.4-7.6; 7.8
TH12. Air quality	Urban exposure to particulate matter		173	United Nations	
TH13. Climate	GHG-emissions	CO_2 emission	229	World Bank	7.2; 7.3
TH14. Energy resources	Energy consumption		187	United Nations	
TH15. Non-energy resources	Domestic material consumption		200	Sustainable Europe Research Institute	
TH16. Trust	Generalised trust	Public sector management (University of Calgary, Canada, Centre for Public Interest Accounting	82	World Bank (World Development Indicators	
TH17. Institutions	Voter turnout		194	International Institute for Democracy and Electoral Assistance	
TH18. Physical capital	Gross capital formation		156	United Nations	
TH19. Knowledge capital	R&D expenditures		116	United Nations	
TH20. Financial capital	Consolidated government debt		84	World Bank (World Development Indicators)	8.10

7. The table shows that the core indicators as selected in the CES Recommendations are available for a relatively large number of countries, and that for many of the themes a direct link can be made with the proposed MDG indicator set.

8. Furthermore, an analysis was made in order to find out to what extent the proposed list of SDG indicators can be linked with the CES framework. This overview also helps us to identify possible gaps in the SDG indicator list, but it also enables us to identify themes that have been ignored by the CES recommendations, but which are considered to be important considering the Post-2015 Agenda and should therefore be included in the framework.

9. This exercise shows that of the total of 309 proposed SDG indicators, only 11 (4 per cent of the total of number of indicators), could not fit into the CES framework. This is because sometimes a proposed indicator in fact includes different measures (see indicator 1.3-1), or that the indicators are not yet defined, but presented as placeholders (meaning that it is indicated in very general terms what

kind of measure is needed, without presenting a specific indicator, see the four indicators under goal 3). In other cases the CES framework needs to be expanded, in order to fit in these indicators. This analysis also indicates that new themes on human rights (with specific attention to women's rights), transport, mobility and population (to address all kinds of demographic issues) are needed.

10. One of the main problems statisticians face with the list of proposed SDG indicators is its mere size. It remains to be seen how many of these indicators are actually available or will be available in the near future, or will be available in such a way that they allow a proper international comparison. In fact some preliminary research into data availability by the United Nations Statistics Division shows quite disappointing results. Often it is argued that making a selection out of this list requires political choices, which the statistical community does not consider to be its task. We advocate a more pragmatic approach for statisticians, by making a distinction between core indicators and other indicators for the SDG indicator list as was done in the CES Recommendations. In this respect, the core indicators measure the essence of the well-being theme in question, whereas the other (policy oriented) indicators provide more detailed information on how the core indicators could be influenced by policies (See CES Recommendations, page 67).

11. First of all, this exercise showed that the number of core indicators in the long list of SDG indicators is actually quite limited. Only 30 out of the total of 309 qualify as what the CES framework considers to be core indicators. The SDG core indicators can especially be found in the field of consumption and income (Theme 2 in the CES Recommendations), education (Theme 6), land and ecosystems (Theme 10) and institutions (Theme 17). However, for a number of themes as distinguished by the CES, no core indicators were proposed in the list of SDG indicators. In other words, many of the SDG indicators may give us information on how certain themes of well-being and sustainable development can be influenced, but actual core indicators about the state of sustainable development in countries are underrepresented. This exercise clearly shows that the proposed SDG indicators do not describe all sustainable development themes, especially not at the level of core indicators.

12. The remainder of this section compares, for each of the 20 themes from the CES Recommendations, the proposed SDG indicators (as long as they can be considered core indicators), with the core indicators as proposed by the CES.[4] This exercise is important as the data availability for core indicators is better than for the other indicators. Moreover, there is more political consensus in the field of core indicators, which implies that this set can be also implemented more easily (and rapidly) by national statisticians. Besides, it helps the international comparability and the further global convergence of sustainable development measurement systems.

A. Theme 1. Subjective well-being

SDG: Gross national happiness (Target 17.19, indicator 2)

CES: Life satisfaction (135 countries)

[4] For each theme the proposed SDG indicators are listed, with the number of the proposed indicator in brackets. For the indicators which are included in the CES framework, the number of countries for which data are available is provided in brackets.

13. Subjective well-being can be measured in terms of gross national happiness as well as life satisfaction. The data on life satisfaction are available for 135 countries.

B. Theme 2. Consumption and income

SDG: proportion of population below 1.25 dollars (expressed in purchasing power parities, PPP) per day (Target 1.1 – indicator 1); Multi-dimensional Poverty Index (1.2-1); Proportion of population below national poverty line (1.2-2); Gross domestic product (GDP) per capita (PPP) (8.1-1), income inequality (Gini or Palma ratio) (10.1-1), change in real disposable income and consumption by quintiles over time (10.1-2).

CES: Final consumption expenditure (210), Official Development Assistance (ODA) (143), income inequality (134), gender pay gap (68).

14. The proportion of people living in poverty as defined in the SDG list is an important aspect of material well-being. However, in the light of the recommendations done by Stiglitz et al., GDP per capita should be replaced by final consumption expenditure, which is available for 210 countries and areas. Besides, CES also includes data on ODA in this theme, as well as data on distribution, with special reference to the gender pay gap (which in the SDG list is defined as a separate goal).

C. Theme 3. Nutrition

SDG: prevalence of undernourishment (2.1-1), prevalence of population with moderate or severe food insecurity (2.1-2).

CES: obesity prevalence for western countries, and malnutrition prevalence for developing countries (160)

15. The proposed SDG indicators are in line with those proposed by the CES Recommendations, even though for high-income countries data on obesity may be included.

D. Theme 4. Health

SDG: No real core indicators.

CES: Life expectancy at birth (185).

16. No actual core indicator of health has been proposed in the SDG list. However, data on life expectancy at birth, as proposed by CES, are available for 185 countries.

E. Theme 5. Labour

SDG: No core indicators

CES: Employment rate (145).

17. Also here, no core indicator has been identified. The employment rate, as proposed by the CES, is available for 145 countries.

F. Theme 6. Education

SDG: Percentage of children who achieve minimum proficiency standards in reading and mathematics at end of primary, lower secondary (4.1-1); completion rate (by type of schooling) (4.1-2); Enrolment ratio's by level of education (4.3-1)

CES: Educational attainment by type of schooling (184)

18. The SDG list consists of a number of important core indicators, which are in line with the suggestion made by CES.

G. Theme 7. Housing

SDG: Percentage of urban population living in slums or informal settlements (11.1-1)

CES: urban population in slums (91)

19. The proposed SDG indicator is the same the one as proposed by CES.

H. Theme 8. Leisure

SDG: not included

CES: only included for developed countries.

20. As leisure can be seen as a relevant aspect of sustainable development for only a very limited number of countries, this theme can be skipped.

I. Theme 9. Physical safety

SDG: Under goal 16 an indicator for homicide and conflict related deaths (16.1-1) is included.

CES: Death by assault/homicide rate (186)

21. The proposed SDG indicator is also included in the CES framework.

J. Theme 10. Land and ecosystems

SDG: Ocean health Index (14.2-2); proportion of fish stocks within biologically sustainable limits (14.4-2); Red list index (15.5-1); living planet index (15.5-2)

CES: Bird index; birth species threatened (214)

22. The proposed SDG indicators cover a much wider range of issues, which should be welcomed.

K. Theme 11. Water

SDG: Percentage of population using safely managed drinking water services (6.1-1); Percentage of population using safely managed sanitation services (6.2-1); Population with a hand washing facility with soap and water in the household (6.2-2)

CES: Water quality index; Water abstractions (93)

23. Also for this theme, the list of SDG indicators addresses a wider range of issues.

L. Theme 12. Air quality

SDG: Population in urban areas exposed to outdoor air pollution levels above World Health Organization guideline values (3.9-1)

CES: urban exposure to particulate matter (173)

24. The SDG proposed indicator is the same as the one selected in the CES framework.

M. Theme 13. Climate

SDG: no core indicator selected.

CES: Greenhouse Gas emissions or carbon dioxide (CO_2) emissions (229)

25. The CO_2 emissions, which are available for 229 countries, can be used as the core indicator.

N. Theme 14. Energy resources

SDG: Renewable energy share in the total final energy consumption (7.2-1)

CES: Energy consumption (187)

26. Energy consumption, and the share of renewable energy in total energy consumption can be used as core indicators.

O. Theme 15. Mineral resources

SDG: not included.

CES: domestic material consumption (200).

27. Data on domestic material consumption, the indicator proposed by CES, are available for 200 countries.

P. Theme 16. Trust

SDG: Proportion of population satisfied with the quality of public services (16.6-2); proportion of the population reporting and perceiving to be discriminated against directly and/or indirectly, and hate crimes (16.b-1).

CES: quality of public sector administration, derived from the World Development Indicators and available for 82 countries.

28. The quality of public services or public administration is a suggested indicator in both the SDG list as in the CES Recommendations. Besides, the SDG list also includes an important indicator on discrimination (indicator in the field of "bridging social capital").

Q. Theme 17. Institutions

SDG: Percentage of people who have experienced a dispute, reporting access to an adequate dispute resolution mechanism (16.3-1); percentage of population and of businesses, who/that paid a bribe to a public official, or were asked for a bribe by these public officials during the last 12 months (16.5-1 and 2)

CES: voter turnout at elections (194)

29. SDG suggestions are much better than the one made in the CES Recommendations, even though measurability of some of the proposed indicators may be questioned. The indicator of voter turnout may be considered as a fall-back option.

R. Themes 18-20 (physical, knowledge and financial capital)

SDG: The proposed SDG indicators do not include capital stock indicators

CES: gross capital formation (156), R&D expenditures (116) and consolidated government debt (84)

30. The proposed SDG indicator list largely ignores capital indicators, which are so important to be informed about the inter-generational aspect of sustainable development. For economic, knowledge and financial capital the CES Recommendations provide information on some capital indicators (the ones for natural capital and human capital are already included in other themes, such as education, energy and climate).

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Bridging the gap: Integrating the measurement of Sustainable Development Goals with existing statistical frameworks

Note by the Statistics Netherlands

Corrigendum

Page 9, after paragraph 30, insert the following:

III. Conclusion

1. This paper aims to look at the possibility of convergence between (i) the proposed SDG indicators which are the outcome of a political process and (ii) existing measurement systems, the CES Framework in particular.

2. First of all, the mapping of the different measurement initiatives was done at the level of themes. From this exercise it can be concluded that, it is obvious that the measurement system as put forward by the CES needs to be expanded. Carefully examining the list of SDG indicator we see that\ population (including key demographic information), transport and mobility as well as human rights (with special focus on women's rights) should be added to the CES framework in order to incorporate important aspects of sustainable development as they were articulated in the open working group. Furthermore, the theme of "leisure", which was included in the CES Recommendations, may be deleted as it seems hardly relevant for the large majority of countries.

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3. Following the CES Recommendations, on the level of indicators a distinction can be made between

(a) core indicators which give information about how a country is doing in terms of its well-being in a specific field, and

(b) policy drivers which give more detailed information on a theme, and tell us how these trends can be influenced.

4. By making this distinction, the long list of proposed SDG indicators can be shortened substantially. In total 30 of the indicators in the SDG list can in this way be considered core indicators. With some indicators added from the CES Recommendations (in those cases where the SDG list did not contain core indicators for a theme), the total number of core indicators amounts to 51 (the specific indicators were mentioned in the previous section). It should be noted that some of the indicators as suggested in the SDG list have greater global relevance, than the ones selected in the CES Recommendations, as the latter group largely focused on sustainable development issues of high-income countries, whereas the Post-2015 agenda explicitly includes developing countries. Furthermore, the list of proposed SDG indicators is closely linked to the outcome of the discussions in the OWG, an important process in which relevant sustainable development challenges, as they are also perceived by the developing countries, were articulated. The CES framework should, in this respect, be seen as a work in progress, in which the views and needs of developing countries need to be carefully elaborated and incorporated. This should be done in close dialogue with those countries, because only then we further the convergence of measurement systems for sustainable development. The CES framework offers a strong conceptual basis for this global convergence, but we also face the challenge to adopt and develop it further, to suit the global need for worldwide comparable SDG indicators.

5. Table 2 shows the number of core indicators that can be derived from the list of proposed SDG indicators and those identified in the CES Recommendations.

Table 2
Number of core indicators in the suggested system (with number of indicators derived from the proposed SDG indicator list and the CES Recommendations)

Theme	*SDG*	*CES*	*Total*
1	1	1	2
2	6	4	10
3	2	1	3
4	0	1	3
5	0	1	1
6	3	0	3
7	1	0	1
8	-	0	0
9	1	2	3
10	4	0	4
11	3	2	5
12	1	1	2
13	2	1	3
14	1	1	2
15	0	1	1
16	2	1	3
17	3	1	4
18	0	1	1
19	0	1	1
20	0	1	1
TOTAL	**30**	**21**	**51**

Note: at a later stage the themes of population, transport and mobility and human rights could be added.

6. This list of core indicators may be a good starting point for an international measurement system on sustainable development and the progress of societies, especially because political consensus on these core indicators may be expected to be larger than in the field of other types of indicators, which are more "policy sensitive".

7. The measurement system can be build up in four steps:

(a) For the 20 CES themes (51 indicators), as well as for population, transport and mobility and human rights (to be expected an additional ten indicators), ca. 60 core indicators can be selected which are most likely widely available;

(b) If for each of these themes, the three most important policy drivers are selected, we will end up with a measurement system of ca. 130 indicators;

(c) The environmental indicators (especially on energy use and emissions) could largely be derived from the SEEA. The UNSD argues that this would enhance the usefulness of the indicators for policy use, as these indicators are "supported by organized information which promotes a detailed understanding of the drivers of change". Besides, the UNSD claims that "the SEEA implementation

can create data efficiencies in the data production process, meaning that indicators are more attainable in data poor environments";

(d) The actual SDG (core) indicators may be seen as a sub-set of the larger system, characterised by the architecture mentioned above (with its distinction between core indicators and policy drivers).

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Initiatives for sustainable development monitoring – the case of Poland

Note by the Central Statistical Office of Poland

Summary

The paper presents the experience of the Central Statistical Office of Poland in monitoring sustainable development, enhancing public awareness of sustainable development and promoting the use of statistics to monitor sustainable development. The paper will also present the Polish experiment of defining indicators for green economy and their relation with sustainable development.

The paper is presented for discussion to the first session of the Conference of European Statisticians' seminar "Response by official statistics to the Sustainable Development Goals".

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I. Introduction

1. Over the previous years, the concept of sustainable development has become anchored in global consciousness. This awareness clears the path to reprogramming the previously implemented policies in order to ensure economic growth which will not adversely affect the natural environment.

2. A few decades from signing *the Stockholm Declaration*[1], and hence noticing the issues of sustainable development, and upon expiry of the Millennium Development Goals, the focus is shifting even more towards sustainable development. The need to address issues of sustainable development appears to be more pronounced and more clearly acknowledged than before.

3. Considering the many unprecedented societal challenges and problems, a special focus reaching from the natural environmental to social aspects is justified. Often human problems affect the surrounding environment. A matter of concern is the rapidly ageing societies in a considerable number of highly developed countries, and, on the other hand – the significant growth in share of young people in the overall population of countries with low level of development. In some regions of the world, fight against hunger is an issue requiring immediate corrective actions; in other regions such issues include respect for human rights or predatory exploitation of the natural environment. Additionally, the global crisis almost a decade earlier contributed to intensification of such negative phenomena as unemployment and poverty. The diversity and complexity of the issues to be tackled in the societies and economies and some negative developments creating risks for future generations, require undertaking firm, long-term measures. This all calls for reliable data for its monitoring.

II. Statistical support for the monitoring process of development policies, including sustainable development

4. Considering the idea of sustainable development in practice means establishing the specific assumptions and goals to be achieved. In Poland, the basis for strategic programming of local development was to determine prospective, medium-term and long-term challenges, reflecting the essence of sustainable development. This process has started with developing the necessary strategic management system. To increase transparency of the planning process and improve the effectiveness of the management system, a decision was made to limit the number of strategic documents, as well as to coordinate activities and monitor the achieved results. The most important for the success of this process are reliable and objective data, on the basis of which the situation is assessed and the decisions are made. The data allows for monitoring of the degree of implementation of scheduled operations. The key role in the process of development strategy monitoring has been entrusted to the Central Statistical Office (CSO). Having high-quality information at its disposal, but also knowledge, experience and methodological basis for compiling the necessary indicators, CSO provides statistical support at every stage of the strategic management process in the government.

[1] Stockholm Declaration – in other words, Declaration of the United Nations Conference on the Human Environment, is one of the vital guidelines, worked out in June 1972, during the Stockholm Conference of the UN. The Declaration contains 26 principles and is considered to be the basis for international environmental protection regulations.

5. The procedure relating to development management in Poland is regulated by law and is based on the system of strategic documents, divided according to the time horizon and focus area. The primary document, with the longest possible time horizon, is The Long-Term National Development Strategy – Poland 2030, which presents the long-term direction of changes. The medium-term development policy is included in the National Development Strategy 2020 (the Polish equivalent of the Europe 2020 Strategy). In order to cover all areas significant from the point of view of development of the country, nine integrated strategies were adopted. Additionally, taking into account the need to monitor the development at regional level, strategic documents for voivodeships were prepared. Considering the unique character of areas exceeding the territorial division patterns, a set of superregional strategies was also adopted. Such set of documents allows for ensuring cohesion of activities undertaken at different levels of management.

6. The Polish statistics derive the models with regard to programming of sustainable development from the achievements of international institutions and organizations. On the level of the European Union, statistical information has been already used for many years to support development management. The role of official statistics was expressly emphasized in the Europe 2020 Strategy. Achievement of the goals of this strategy is to be monitored by means of statistical indicators in the given timeframe. The economic development remains the primary goal of the Europe 2020 Strategy, however, the nature of this development was specified as balanced, smart and stimulating social integration.

7. The recognition of the importance of sustainable development in Poland is underlined by the fact that the need for economic development in line with sustainability was included in the Constitution of the Republic of Poland – the supreme legal act of Poland. The sustainable development goals are reflected in the national system of strategic documents. Each aspect relating to the idea of sustainable development (in the economic, social and environmental sense) finds its equivalent in these documents and is monitored by a broad range of indicators which are based on the official statistics system.

8. Identification of the priority problems and making an adequate diagnosis of the current situation, as well as ensuring good quality measures reflecting the result of the undertaken activities requires provision of relevant indicators. Therefore, it is necessary to base the monitoring system on official statistics and include its representatives in the process of policy programming from the beginning. Poland can take pride in good practices in this respect – close cooperation between statistics and the institutions responsible for particular documents allowed for mutual understanding of expectations, opportunities and constraints. This cooperation contributed to determination of the proper set of measures, but simultaneously allowed for identifying the public statistics as a significant partner in the process of strategic planning and management.

9. The results of such co-operation include, among others, preparation of the development policy monitoring system STRATEG (available at: strateg.stat.gov.pl). It is a publicly available system, dedicated, in particular, to public administration responsible for creating the development policy, both at the national as well as regional level. The system was created in order to support the development management process, and one of the areas of STRATEG was devoted to the issues relating to sustainable development. The primary purpose of the implementation of this system was gathering in one place a set of information about measures, helpful in the process of development programming and evaluation of the assumed goals. It constitutes a comprehensive source of information, gathering data from the public statistics system, as well as provided by specialized agencies or institutes. Building and providing access to the STRATEG system is one of the elements comprising the

realization of the priority goals of the public statistics set forth in the directions of the Polish public statistics development until 2017 – i.e. support of the process of programming and monitoring of the development policy at the national and regional level. The publicly accessible system STRATEG also constitutes an important element of statistical education about sustainable development, by strengthening social consciousness in this area.

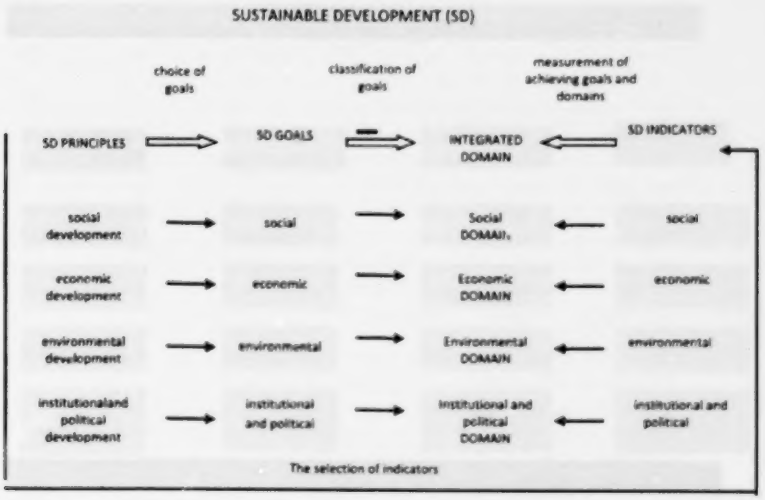
III. Set of indicators for monitoring sustainable development in Poland

10. In order to integrate and bring together a complete set of information concerning sustainable development, the Polish official statistics undertook an initiative aiming at developing a set of indicators for monitoring sustainable development at the national level. Selection of indicators was preceded by a detailed analysis on the elements that pertain to socio-economic life and relate to natural environment that should be subject to measurement. The analysis was based on identification of the principles of sustainable development of the European Commission, focusing on the areas important for research on sustainable development. The analysis also covered the national strategic documents referring to sustainable development. On this basis, the term of integrated approach was formulated and key aspects were identified as social, economic, environmental and institutional-political. These aspects define the areas which sustainable development policies should address.

11. The integrated approach developed by CSO determines the general system for measuring sustainable development in Poland and refers to a coherent (consistent) and simultaneous co-existence of the aspects of sustainable development (Figure 1):

- social (sustainable social development), identifying strategic goals and measures, as well as projects aiming at improvement in social life;
- economic (sustainable economic development), determining the strategic goals and measures generating effective socio-economic development;
- environmental (sustainable environmental protection), formulating conditions and strategic goals of protection and rational shaping of the natural environment, aiming at consolidation of sustainable ecological development (eco-development);
- institutional-political (separated from the social order to highlight the institutional frameworks of sustainable development), concerning global partnership and good management.

Figure 1.
Construction and classification of national sustainable development indicators



Source: own compilation.

12. A system of strategic goals forms the structural basis for the integrated approach on sustainable development. The selected indicators of sustainable development will then help to monitor the achievement of sustainable development goals in each area in the given time-frame.

13. The following criteria were followed when selecting the indicators of sustainable development at the national level:

- presence on the list of indicators for monitoring the implementation of the European Union Sustainable Development Strategy;
- international comparability;
- availability of data;
- credibility of data sources.

14. One of the principles was also that the aim, if possible, should be to suggest also measures pertaining to more than one of aspect of sustainable development.

15. As a result of a screening of possible indicators, in total 77 indicators were selected, constituting the system for the monitoring of sustainable development in Poland. The relevance of the indicators on the national list is subject to regular monitoring. Availability of previously selected indicators is regularly assessed and new sources of information are explored to enrich and improve the information coverage.

16. The outcome of previous work that considered a national set of indicators of sustainable development is presented in the publication: *Polish Sustainable Development Indicators*[2].

[2] The publication is available at: http://stat.gov.pl/en/topics/other-studies/other-aggregated-studies/sustainable-development-indicators-for-poland,3,1.html

17. In order to enrich data presentation, a separate database of sustainable development indicators is being built. The database will provide a presentation of indicators in a graphic form (including charts and maps).

18. Establishing a dedicated system for the purposes of monitoring sustainable development is strongly justified. The previously mentioned STRATEG system aims at monitoring the development and cohesion policy (including sustainable development as one of the priority areas of the cohesion policy). A separate database dedicated to the monitoring of sustainable development indicators (SDI) provides a detailed presentation of the indicators in three modules: national (the country, the EU member states), regional (NUTS 1, NUTS 2), and local (NUTS 4). These indicators are grouped according to the four aspects of sustainable development. The SDI database will also contain a set of metadata, including the so-called indicator metrics, such as definitions, methodological explanations, importance for sustainable development, monitored goals and the thematic areas corresponding to the frame for monitoring sustainable development in the European Union.

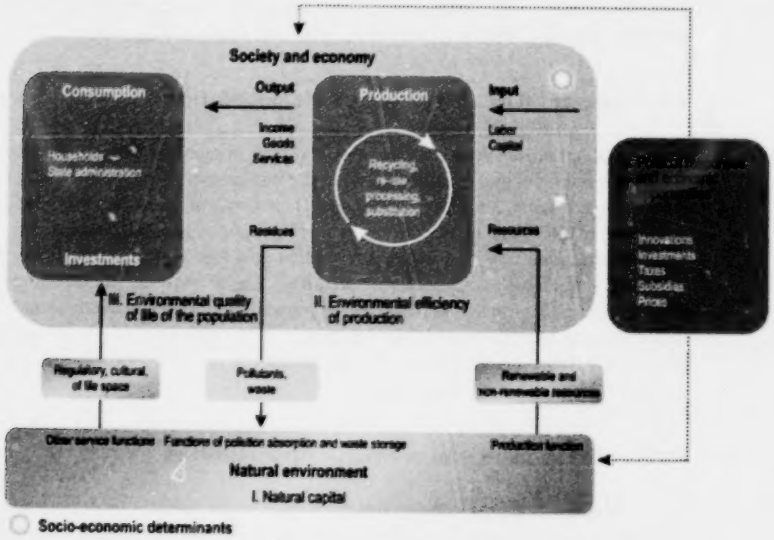
19. The newly established database and indicators may need to be adjusted to the monitoring of the Post-2015 Development Agenda. CSO takes account of these developments and data needs in the final set of indicators at global, regional and national levels. Therefore, CSO is analysing the possibility of expanding the current SDI database in order to include any additional indicators related to the monitoring of the Post-2015 Development Agenda.

IV. The concept of measurement of the green economy in Poland

20. Sustainable development is in many ways connected with the green economy, understood as the new path of socio-economic development which effectively executes the sustainable development goals. Environment, economy and society form the three basic pillars of both sustainable development and green economy. However, in the case of green economy, the social aspect is included in a narrower way, only in the part which is directly associated with the environment or the economy. This is further reflected in selecting the Polish official statistics focusing mostly on the natural environment and the production of goods and services (economy).

21. To enable monitoring of development towards green economy, CSO defined the areas of green economy using the experience of OECD. The definition takes account of national conditions and relations between the elements of green economy: environment, economy and society.

Figure 2.
The relations between the elements of the green economy and the groups of indicators



Source: own study on the basis of Monitoring Progress Towards Green Growth. OECD Indicators 2013 Report, OECD, p. 6.

22. In the course of the work, four areas were distinguished as the key elements of green economy:

1. Natural capital

23. This group includes indicators describing the state of the natural environment which constitute the basis for the functioning of the economy and society. It can be described by indicators of natural capital. Natural capital includes the stock of renewable and non-renewable resources, and plays a fundamental role in the concept of green economy, since the pressure for its use unavoidably grows and, as a result, makes it impossible to maintain the present path of economic growth. Constant land use may result in irreparable losses and create imbalance in this capital. Green economy is supposed to provide supply of renewable and non-renewable resources, as well as other ecosystem services, sufficient for economic development, with a simultaneous minimizing of the adverse environmental impact, which is related to acquisition, use and processing of the natural capital. Therefore, from this point of view, it is considered important to monitor the state and the direction of changes of various kinds of resources, e.g.: minerals, fauna, flora, fresh water.

2. Environmental efficiency of production

24. This area includes indicators used for describing the interrelations between the natural environment and the economy. The production processes use the environmental resources, as well as work and capital in order to generate goods and services. The side effects of their production are contamination and waste, which cannot be stored in the environment. The main priority in the process of greening of

economy is improvement in effectiveness of the use of the natural environment in order to sever the link between economic growth and the increased use of natural resources. This efficiency is measured with the use of indicators falling under the group environmental efficiency of production, presenting the productivity of energy, greenhouse gases, balance of nutrients, water and waste management.

3. Environmental quality of life of the population

25. The environmental quality of life of the population gathers the indicators used for monitoring the relations between the natural environment and the society. It is associated with regulatory, life space, cultural services, which the natural environment provides to people, as well as with the general state of the natural environment. The quality of the environment is a key factor affecting the general well-being of people and other living creatures. The level of environmental pollution directly affects the quality of living of the population, as a result of the impact on the health condition of the society. As part of this group of indicators, the following will be monitored, among others: level of air pollution, noise, public sewage treatment, access to drinking water, green areas.

4. Political responses and economic opportunities

26. Political responses and economic opportunities include indicators describing the instruments influencing economy and society to create the desired development. Redirecting the economy from the traditional to green economy requires the application of many diverse instruments within various political activities. The public authority has access to different political tools, forcing specific behaviours of entities, aiming at greening the economy, such as: legal regulations, taxes or subsidies. They can support actions aimed at increasing the effectiveness in, e.g., utilization of the components of the natural environment, as well as provide incentives for the development of environmentally friendly models of production and consumption. Monitoring the use of instruments and actions, as well as of their effects, should become the focus of the decision-makers. At the same time, these instruments and actions create new economic possibilities for the development of specific types of activities, creating new jobs and stimulating economic growth. The group of indicators concerning political responses and economic opportunities includes, among others: ecological farms, green public orders, the Green Investments Scheme (GIS), green inventions and patents, outlays for environmental protection.

27. While analysing the conditions of greening the economy, we should keep in mind that the economy of a given country does not operate separately from the surrounding world. Therefore, in order to fully analyse the condition of greening the economy, it is necessary to also take into consideration the wider surroundings, which, in turn, creates the need for presenting contextual indicators allowing for diagnosing the socio-economic situation of the country.

28. To enable observation of changes, CSO developed a system of indicators for the monitoring of green economy. Due consideration to the national conditions required adding new, national indicators into the indicator set. They include the

percentage of green public orders and reduction in CO_2 emissions as a result of the execution of projects within the Green Investment Scheme (GIS)[3].

29. The preliminary assumptions show that the monitoring system of the greening status of the economy in Poland covers 55 indicators, including: within the group of natural capital – 12, environmental efficiency of production – 15, environmental life quality of the population – 14, political responses and economic opportunities – 14. Application of these measures will be possible only with cooperation of the official statistics with many national and international entities with datasets. In order to compare the situation of Poland with other states, the data will be used from, among others, Eurostat, OECD and the European Environmental Agency (EEA).

30. Issuing of the first report, presenting the condition of the green economy in Poland is planned for the end of 2015. It will contain selected data describing the condition of greening of the Polish economy.

V. Challenges faced by official statistics in the light of the Post–2015 Development Agenda

31. The project of preparing the Post-2015 Development Agenda creates new challenges for official statistical systems. Monitoring of the Post-2015 Development Agenda also requires developing a set of indicators on sustainable development goals. Provision of information and methodological support for the monitoring of the sustainable development goals was entrusted to national statistical offices.

32. Noticing the need for involvement of statistical offices at an early stage of the implemented project, CSO joined the Interministerial Consultative Team on inter-governmental negotiations regarding the Post-2015 Development Agenda. The works of the Team, coordinated by the Ministry of Foreign Affairs, are intended to coordinate the activities and develop a position on the Agenda. From the point of view of a statistical office, participation in these works allows learning about the process of agreeing on the Agenda and the sustainable development goals. However, this process needs to give consideration to a proper selection of measures that enables monitoring. Making sure that the list of indicators used for monitoring the sustainable development goals is as adequate as possible, CSO actively participates in the ongoing process, expresses its opinions on the indicators, such as the need to select indicators that represent the goals as precisely as possible, while at the same time have a sound methodological basis for their measurement.

33. Decision-makers are currently facing global challenges in the path towards sustainable development. They are undertaking a number of initiatives to fulfil this task. Therefore, a significant effort is needed to develop sufficient frameworks for monitoring this important global effort. The CSO experience has shown the necessity for official statistics to participate actively in the process of monitoring all development policies, including on sustainable development.

34. The changes occurring in the existing world, the abundance of issues and processes to be monitored, make the measurement an increasingly complex task. Monitoring of sustainable development, and the numerous related initiatives, is an

[3] GIS is a system of financial support for investments related to the protection of climate and reduction of CO_2 emission by means of funds obtained from sales of surpluses of CO2 emission units, the so-called AAU (Assigned Amount Units), on the international market, granted in the system of the UN under the Kyoto Protocol

urgent challenge for the official statistical systems. This challenge requires going beyond measuring gross domestic product and analysing many areas affecting people's well-being and the environment. Searching for and applying monitoring measures integrating the three basic pillars of sustainable development has a significant importance. To ensure reliable and comprehensive monitoring of sustainable development should be a priority for the development of official statistics.

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Role of the Statistical Office in Slovenia in defining and reporting of different sets of indicators

Note by the Statistical Office of the Republic of Slovenia

Summary

The paper introduces Slovenia's experience with measuring well-being and issues relating to Sustainable Development Goals. The paper describes the process of defining a national set of well-being indicators using the "Conference of European Statisticians' Recommendations on Measuring Sustainable Development". The Statistical Office of the Republic of Slovenia developed the national set in collaboration with the Institute for Macroeconomic Analysis and Development, Environmental Agency and National Institute for Public Health. The paper also touches upon the work of a national inter-governmental working group which is preparing and reviewing Slovenian input to the Open Working Group on Sustainable Development Goals.

The paper is presented for discussion to the Conference of European Statisticians' first session of the seminar "Response by official statistics to the Sustainable Development Goals".

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Please recycle

I. Measuring well-being in Slovenia

1. In 2012, the initiative to measure well-being in Slovenia was launched by the Institute for Macroeconomic Analysis and Development. For the implementation of the project a consortium of four institutions was established, including the Institute for Macroeconomic Analysis and Development, the Statistical Office of the Republic of Slovenia (SORS), National Institute for Public Health and the Slovenian Environment Agency.

2. The project aimed at developing indicators of well-being in Slovenia taking into account the data needs of different groups of stakeholders: policymakers, journalists, researchers and general public. This approach required the readiness to use different levels of communication ranging from an easily understandable visual presentation and short written explanations of trends to thorough theoretical and methodological descriptions.

II. Concept of well-being, sustainable development and links between both

3. The theoretical background of well-being in the literature is expressed as prosperity, well-being and quality of life which as a rule appear as synonyms and include a wide range of factors. The scope of well-being is interdisciplinary covering various scientific fields (economy, sociology, psychology, medicine, etc.), and it deals with the people's lives, their feelings and issues affecting them.

4. Here the "definition" of sustainable development is derived from the Brundtland report which defines sustainable development as a development which meets the needs of the present generation without compromising the ability of future generations to meet their needs.

5. Although the concepts of well-being and sustainable development are fundamentally different, in recent years the interconnections of both concepts were studied and implemented in theory and in practice.

6. In determining the concept of measuring well-being in Slovenia, the existing concept of well-being was extended with elements of sustainability. This means that Slovenia established a system of indicators covering all important factors of well-being of the current generation, with some selected indicators measuring also the potential for the well-being of future generations.

7. Three main dimensions of well-being were identified:

(a) The dimension of material well-being included, in addition to income, indicators that measure the living standards. It also considers unemployment, although unemployment may also be an indicator of social well-being as a key element of social cohesion;

(b) The dimension of social well-being included intangible indicators measuring subjective well-being of individuals;

(c) The dimension of environment is based on a system called environmental well-being which combines elements of the local environment and the sustainability of well-being and includes natural resources directly linked to human well-being.

8. Each main dimension includes subsections; namely material well-being includes subsections on income, wealth and economic security, poverty and social exclusion, consumption, work, employment and housing. Social well-being includes subsections on

life satisfaction, health, education, social environment, personal safety, communication, culture and leisure. Environmental well-being consists of subsections on land and ecosystems, air, water, climate, energy resources, non-energy resources and waste.

9. The *Conference of the European Statisticians Recommendations on Measuring Sustainable Development (CES Recommendations)* supported the discussion about the conceptual framework for the well-being indicators in Slovenia. The Slovenian team cross-checked their draft list of indicators with the set of indicators proposed by the CES Recommendations and found that 13 out of 20 leading indicators proposed in Slovenia matched with the indicators of the small set of 24 indicators in the CES Recommendations. In further discussions and refinements of well-being indicators for Slovenia, the CES Recommendations were used as a valuable methodological guide and reference point.

III. Role of the national statistical office and other partners

10. The set of well-being indicators in Slovenia was established on the basis of the following criteria:

(a) Expressive power of the indicator;

(b) General awareness and sound methodological structure of the indicator; and

(c) Availability of data.

11. For some aspects of well-being appropriate indicators were not found and they were replaced with proxies. This was the case mainly for the indicators of economic security and economic and financial capital in the dimension of material well-being, as well as for time use and social climate indicators in the dimension of social well-being. As the methodological knowledge and data availability improve, more relevant indicators will be gradually acquired to replace the proxies. At the moment, one headline indicator and a number of supportive indicators (from 1 to 8 indicators) were selected for each subsection.

12. Data sources for the indicators vary. The majority of data was in fact the official statistical data produced by SORS, some of them was official statistics produced by National Institute for Public Health which is the other national authority responsible for the development, production and dissemination of statistics. Other data sources were: Slovenian Environment Agency, Public Opinion and Mass Communication Research Centre and its Slovenian Public Opinion Survey, Public Opinion and Mass Communication Research Centre and its European Social Survey, State Election Commission, National Assembly, Agricultural Institute of Slovenia and Ministry for Foreign Affairs of Slovenia.

13. Although data sources were mixed, the role of SORS in the group was strong not only as a data provider but also because of the comprehensive methodological knowledge and systematic approach to data dissemination. The important input of other partners of the group was, beside the preparation of non-statistical data, writing the expert comments and judgments about the indicator trends linked to the current policies and strategies in Slovenia.

14. Data sets and graphical presentations were prepared for each indicator, together with comments about the trends and evaluation of the trends – positive, negative, neutral.

15. Furthermore, methodological information sheet was prepared for each indicator containing the indicator ID, definition, interpretation and rationale for the indicator selection, dimension and distribution, data source in Slovenia, data source of international comparison data, proposals for improvement, references and contact person(s).

16. After nearly two years of work the group presented the results of the project on the website http://www.kazalniki-blaginje.gov.si/ (available for now only in Slovene). Well-being indicators for Slovenia are divided in three main sections, 20 subsections with 20

headline indicators and 72 supportive indicators which provide an overall description of the living standards and quality of life in the society and considering the environment.

IV. Pilot testing of CES Recommendations

17. SORS participated in the pilot testing of the CES Recommendations on Measuring Sustainable Development. The list of well-being indicators for Slovenia was compared to the recommended list of indicators. There is a strong overlap of many themes such as health, labour, education, physical safety, trust and institutions. It was established that Slovenia produces 66% of the CES indicators and that the majority of the indicators are produced by SORS.

V. National inter-governmental Sustainable Development Goals working group

18. In 2014, SORS was involved in the work of a national inter-governmental working group which was preparing and reviewing the Slovenian input to the Open Working Group on Sustainable Development Goals. This enabled the Statistical Office of the Republic of Slovenia to have a broad overview and influence in the process of establishing different sets of indicators, as well as to have an early indication of data availability and new data needs.

VI. Conclusion

19. The paper described how the CES Recommendations were applied in the project of establishing Slovenian well-being indicators. The CES Recommendations provided a valuable methodological guide and reference point during this work. The role of SORS in the project was related not only to statistical data but also to the methodological support and cooperation with non-official data producers. The experiences from the project are very positive and could serve as a good practice also in the future as long as the roles of the partners are clearly defined and limitations respected.

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The role of national statistical offices pertaining to measuring sustainable development

Note by the Office for National Statistics of the United Kingdom

Summary

The paper sets out how the Office for National Statistics of the United Kingdom has prepared for national reporting and raised awareness about the impact of collecting data for Sustainable Development Goals across the Government Statistical Service. Some of these actions include: coordinating responses to consultations, hosting workshops, developing a dedicated web page to share information and developments with key partners, assessing potential frameworks for both reporting and measuring of goals and targets against other national and international frameworks, reviewing the measurability of proposed targets and evaluating availability of data for indicators and whether indicators can be disaggregated. This paper also describes the work with policy colleagues to ensure that statistical measurability will be considered throughout each stage of developing Sustainable Development Goals and to support the international work on data revolution.

The paper is presented for discussion to the first session of the Conference of European Statisticians' seminar "Response by official statistics to the Sustainable Development Goals".

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I. Background to the measurement of sustainable development

1. The United Kingdom (UK) Government launched its Vision for Mainstreaming Sustainable Development in 2011. Following a public consultation and a commitment made in that Vision, the Department for Environment, Food and Rural Affairs (Defra) developed a revised set of Indicators in 2013. The Sustainable Development Indicators (SDIs), which were the outcome of this consultation, provide an overview of progress towards the three pillars of sustainability: the economy, society and the environment. The first of the 'Sustainable Development Indicators' series was published in July 2013. In April 2014 responsibility for maintaining and reporting the SDIs transferred to ONS (details on SDIs are in Annex I).

2. Since 2012, ONS has produced and published a set of measures of national well-being. The publication of the headline set of indicators reflect a framework that is based on 10 domains including health, education and skills, governance, the natural environment, etc. (details of the domains and measures are presented in Annex II). In addition to the 10 domains, the framework includes the dimensions of sustainability and equality to provide a more complete measure of how the country is doing.

3. The United Nations Conference on Sustainable Development - or Rio+20 - took place in Rio de Janeiro, Brazil on 20-22 June 2012. It resulted in a focused political outcome document "The Future We Want" which contains clear and practical measures for implementing sustainable development. In Rio, Member States decided to launch a process to develop a set of Sustainable Development Goals (SDGs), which will build upon the Millennium Development Goals and converge with the Post-2015 Development Agenda. It is expected that national statistics offices will be asked to report against the Sustainable Development Goals from 2016 onwards and that such reports will be annual.

4. In the UK, data collection, statistical and analytical work for government is not carried out by one organisation. Overall control of the UK's official statistics is under the remit of the UK Statistics Authority (UKSA) which is an independent body operating at arm's length from Government as a non-ministerial department directly accountable to Parliament. It has two main functions: oversight of ONS and independent monitoring and assessment of official statistics, maintaining a Code of Practice for Official Statistics and accrediting Code-compliant statistics as 'National Statistics'. The Government Statistical Service (GSS) is the community of all civil servants who work in the collection, production and communication of UK official statistics. It includes not only statisticians, but also economists, social researchers, information technology professionals, and secretarial and clerical staff. Members of the GSS work in ONS, most UK Government departments, and the devolved administrations. The National Statistician, John Pullinger, is the Head of the GSS. In 2013, ONS was asked to coordinate input of the GSS into the Post-2015 Development Agenda for Sustainable Development.

II. Working alongside policy colleagues

5. A key role for the statistical community was to encourage those working on political negotiations to seek technical input and advice.

6. In early 2013, ONS recognised the immediate need for GSS to input into the political discussions and negotiations on the Post-2015 Development Agenda for Sustainable Development. With the UK National Statistician's support, ONS became a GSS representative at key groups where UK political priorities and strategies on SDGs were being discussed. The purpose of attending these meetings is to:

- Understand government and departmental priorities to inform technical discussions;

- Contribute technical advice (such as wording for targets) for negotiation purposes;
- Provide assessment of UK statistical and data capabilities for the measurement and reporting on SDGs;
- Ensure that impartiality and other aspects of the Fundamental Principles for Official Statistics are followed.

7. Statistical support towards the Post-2015 Development Agenda has also been given by assessing potential SDG frameworks against other national and international frameworks and reviewing the measurability of proposed targets. ONS have also, where appropriate, given information about the parallel international and national processes of examining the availability of data for the measurement of progress for potential targets.

III. Government Statistical Service in the United Kingdom

8. The key role of ONS was to raise the profile of SDGs across the Government Statistical Service (GSS) to prepare departments and devolved administrations to deal with statistical requirements of SDGs.

9. In September 2013, ONS convened a 'data group' of statistical colleagues from government departments and the devolved administrations of the UK (Northern Ireland, Scotland and Wales) to brief on the emerging Post-2015 Development Agenda. This group is tasked with providing thematic advice on the statistical measurement of proposed goals and targets. ONS represents the data group at meetings with policy officials and at European and United Nations statistical events where SDGs are discussed.

10. ONS ensures that members of the GSS data group are kept abreast of developments, including using a dedicated SDG web page to share information and developments, and convening face-to-face workshops when there are key decision points or major developments. Much of this work has been done in collaboration with the Department for International Development (DFID) whose Minister has overall charge of negotiations for the UK Government.

11. ONS, on behalf of GSS, has been involved in the wider international statistical community such as the United Nations Friends of the Chair Group on Broader Measures of Progress (FOC), the Inter-agency Expert Group on Sustainable Development indicators (IAEG-SDG) and the Sustainable Development Solutions Network (SDSN). Where time and resource constraints allowed the data group has been consulted

12. Examples of the GSS's contribution to the development of measures for SDGs include:

- ONS/GSS provided statistical input into 25 of the 29 statistical notes to support Open Working Group (OWG) focus area papers ;
- Working with our statistical counterparts in Australia and the Netherlands, with whom the UK shared a seat on the Open Working Group, the UK contributed to a joint paper on 'Measuring for Sustainable Development and the post-2015 agenda' which was submitted to the FOC in September 2013;
- In 2014 a response to the FOC consultation on national data availability for potential indicators was provided;
- Comments were provided prior to publication of the report about the data revolution 'A World that Counts';

- In February 2015, ONS coordinated the GSS contribution into the UN Statistical Division response on a set of proposed preliminary indicators based on the OWG's proposed goals and targets.

IV. Developing a collection and reporting system

13. ONS (which is independent of government) is prepared to report on UK progress against the final set of SDGs and targets.

14. The review and monitoring process as proposed in the UN Secretary General's Synthesis Report (Section 5.3. 'Gauging our progress: Monitoring, evaluation and reporting') envisioned a voluntary, state-led, participatory, evidence-based, and multi-tiered process to monitor progress. The national process was described as a country-led, national component for accountability. While the overall process would involve multi-stakeholder participation, it would be based on evidence compiled from multiple sources. The proposed mechanism for this evidence base would be a report of indicators to monitor targets compiled by national statistical offices. ONS has already developed systems for reporting on the measures of national well-being and, separately, on Sustainable Development Indicators, so we are preparing for the development of a reporting system for SDGs that will build on these sets of indicators.

V. Frameworks

15. ONS has undertaken the key role to provide an assessment of how different frameworks may be applied to SDGs to help communicate their meaning.

16. ONS are planning to integrate the system to report on indicators to monitor SDG targets with those which are already used to measure national well-being and SDIs and considering other systems developed for this purpose such as the Conference of European Statisticians (CES) model.

17. The Secretary General's Synthesis report said:

"The following six essential elements would help frame and reinforce the universal, integrated and transformative nature of a sustainable development agenda and ensure that the ambition expressed by Member States in the outcome of the Open Working Group translates, communicates and is delivered at the country level".

These elements are shown in the diagrams in Annex III.

18. Diagram 1 in Annex III shows how these six essential elements might be mapped to currently proposed OWG goals, the domains of the UK's measures of national well-being and the twelve themes used for SDIs. The six elements suggested for the reporting framework proposed in the United Nations Secretary General's Synthesis report can also be aligned with others including CES framework to give a common framework. Diagram 2 in Annex III shows a potential alignment of the six elements with the current 17 OWG goals and the CES sustainable development themes.

VI. Next steps

19. ONS will continue to coordinate and provide statistical advice and comments into the development of SDGs, both nationally and internationally. It is expected that we will provide input to the Inter-Agency Expert Group on SDGs, either as members or via comments, as that group develops an indicator framework, criteria for selecting indicators

and a set of indicators to be endorsed by the United Nations Statistical Commission in March 2016. ONS will also continue to coordinate and provide statistical advice and comments to our policy colleagues during the Inter-Governmental Negotiations which are due to conclude at the end of July 2015.

20. ONS, with GSS colleagues, will need to consider and assess new and non-official data sources that may be considered to monitor SDGs. We will also need to develop new methods for monitoring SDGs, for example modelling to provide disaggregated data for particular targets, and consider additional administrative information for this purpose. In this way, we expect to contribute to the data revolution.

21. In addition, ONS is developing a reporting framework that will continue to provide measures of national well-being, but also meet the needs of UK policy departments and allow a transparent method for monitoring and reporting on SDGs. This framework is hoped to minimise duplication of efforts in the collection and production of data and meet the requirements to provide both global and national indicators for SDGs.

Annex I

United Kingdom Sustainable Development indicators

1. Economy

Headline

Indicator 1: Economic Prosperity

- Indices of Gross Domestic Product (GDP)
- GDP per head and median income
- Income distribution of the whole of the population, before housing costs

Indicator 2: Long-term unemployment

- Proportion of economically active adults unemployed for over 12 months

Indicator 3: Poverty

- Proportion of children in relative low income households before housing costs
- Proportion of children in absolute low income households before housing costs

Indicator 4: Knowledge and skills

- Human capital stock (£ trillion)
- Human capital per head (£ thousand)
- Employed human capital (£ trillion) by age group

Supplementary

Indicator 13: Population Demographics

- Total population and projected population
- Index of population and projected population
- Total number of household and projected household numbers

Indicator 14: Debt

- Public Sector Net Debt (Percentage of GDP)
- Public Sector Net Borrowing (Percentage of GDP)

Indicator 15: Pension Provision

- Percentage of workers in the automatic enrolment eligible population with a workplace pension scheme

Indicator 16: Physical Infrastructure

- Estimated asset net worth at year end by type of structure, at current prices

Indicator 17: Research and development

- Expenditure on research and development performed in business
- Expenditure on research and development related to environmental expenditure

Indicator 18: Environmental Goods and Services Sector

- Total sales in the Environment Goods and Services Sector

2. Society

Headline

Indicator 5: Healthy life expectancy

- Years of life expectancy and healthy life expectancy at birth

Indicator 6: Social Capital

- The proportion of people engaging in actions designed to identify and address issues of public concern at least once a year
- The proportion of people engaging in any volunteering activity at least once a year
- The proportion of people who have a partner, family member or friend to rely on if they have a serious problem
- The proportion of people agreeing that people in their neighbourhood can be trusted

Indicator 7: Social Mobility in Adulthood

- Proportion of 16 to 65 year olds who are in paid employment who are in managerial or professional positions by social background using father's occupational group

Indicator 8: Housing provision

- Trends in net additional dwellings

Supplementary

Indicator 19: Avoidable Mortality

- Mortality rate per 100,000 population due to avoidable causes

Indicator 20: Obesity

- Percentage of adults and children overweight or obese
- Percentage of adults and children overweight or obese based on deprivation level

Indicator 21: Lifestyles

- Proportion of people aged over 18 who smoke
- Proportion of urban trips under five miles taken by walking/cycling or public transport
- Proportion of adults doing physical activity by time spent exercising
- Average daily consumption of 5 a day portions by age group

- Trends in fruit and veg purchases measured as portions

Indicator 22: Infant health

- Proportion of full term live births with weight less than 2,500g
- Proportion of all live births, weight less than 2,500g, based on parent's occupation

Indicator 23: Air quality

- Days when air pollution is moderate or higher

Indicator 24: Noise

- Noise complaints per 1,000 population

Indicator 25: Fuel poverty

- Total number of households in fuel poverty under the low income high cost definition

3. Environment

Headline

Indicator 9: Greenhouse gas emissions

- Greenhouse gas emissions million tonnes carbon dioxide equivalent
- Greenhouse gas emissions million tonnes carbon dioxide equivalent (MTCO2e) associated with UK consumption

Indicator 10: Natural Resource Use

- Raw material consumption of construction and non-construction materials

Indicator 11: Wildlife

- Populations of wild birds

Indicator 12: Water Use

- Estimate direct actual abstractions - non-tidal surface waters & groundwater
- Estimate direct actual abstractions - non-tidal surface waters & groundwater by use

Supplementary

Indicator 26: UK carbon dioxide emissions by sector

- Annual emissions per sector measured in million tonnes of carbon dioxide

Indicator 27: Energy from renewable sources

- Proportion of gross energy consumption from renewable sources

Indicator 28: Housing energy efficiency

- Mean standard assessment procedure rating by tenure

Indicator 29: Waste disposal and recycling

- Household waste recycling rate
- Construction and demolition waste recovery rate

Indicator 30: Land use

- Land use by type
- Detailed landcover by type

Indicator 31: Origins of food consumed in the UK

- Proportion of food consumed in the UK by region or origin
- Indicator 32: Water quality
- The biological quality of rivers
- The chemical status of rivers

Indicator 33: Sustainable fisheries

- Fish stocks harvested sustainably and at full reproductive capacity

Indicator 34: Priority species and habitats

- Percentage of UK species of European importance in improving or declining conservation status
- Percentage of UK habitats of European importance in improving or declining conservation status

Indicator 35: UK biodiversity impacts overseas (Note: this indicator is under development)

Annex II

United Kingdom Measuring National Well-being

1. Personal well-being

1.1 Very high rating of satisfaction with their lives overall

1.2 Very high rating of how worthwhile the things they do are

1.3 Rated their happiness yesterday as very high

1.4 Rated their anxiety yesterday as very low

1.5 Population mental well-being

2. Our relationships

2.1 Average rating of satisfaction with family life

2.2 Average rating of satisfaction with social life

2.3 Has a spouse, family member or friend to rely on if they have a serious problem

3. Health

3.1 Healthy life expectancy at birth (male/female)

3.2 Reported a long term illness and a disability

3.3 Somewhat, mostly or completely satisfied with their health

3.4 Some evidence indicating depression or anxiety

4. What we do

4.1 Unemployment rate

4.2 Somewhat, mostly or completely satisfied with their job

4.3 Somewhat, mostly or completely satisfied with their amount of leisure time

4.4 Volunteered more than once in the last 12 months

4.5 Engaged with/participated in arts or cultural activity at least 3 times in last year

4.6 Adult participation in 30 minutes of moderate intensity sport, once per week.

5. Where we live

5.1 Crimes against the person (per 1,000 adults)

5.2 Felt fairly/very safe walking alone after dark (men/women)

5.3 Accessed natural environment at least once a week in the last 12 months

5.4 Agreed/agreed strongly they felt they belonged to their neighbourhood

5.5 Households with good transport access to key services or work (2011 = 100)

5.6 Fairly/very satisfied with their accommodation

6. Personal finance

6.1 Individuals in households with less than 60% of median income after housing costs

6.2 Median wealth per household, including pension wealth

6.3 Real median household income

6.4 Somewhat, mostly or completely satisfied with the income of their household

6.5 Report finding it quite or very difficult to get by financially

7. The economy

7.1 Real net national disposable income per head

7.2 UK public sector net debt as a percentage of Gross Domestic Product

7.3 Inflation rate (as measured by the Consumer Price Index)

8. Education and skills

8.1 Human capital - value of peoples' skills, knowledge & competences in labour market

8.2 Five or more GCSEs A* to C including English and Maths

8.3 UK residents aged 16 to 64 with no qualifications

9. Governance

9.1 Voter turnout in UK General Elections

9.2 Those who have trust in national Government

10. The natural environment

10.1 Total greenhouse gas emissions (millions of tonnes)

10.2 Protected areas in the UK (Millions hectares)

10.3 Energy consumed within the UK from renewable sources

10 4 Household waste that is recycled

Annex III

Mapping Open Working Group Goals to other frameworks

For information the list of goals (July 2014) referred to in Diagrams 1 and 2 is given here.

1. End poverty in all its forms everywhere;

2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture;

3. Ensure healthy lives and promote well-being for all at all ages;

4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all;

5. Achieve gender equality and empower all women and girls;

6. Ensure availability and sustainable management of water and sanitation for all;

7. Ensure access to affordable, reliable, sustainable, and modern energy for all;

8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;

9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation;

10. Reduce inequality within and among countries;

11. Make cities and human settlements inclusive, safe, resilient and sustainable;

12. Ensure sustainable consumption and production patterns;

13. Take urgent action to combat climate change and its impacts;

14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development;

15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss;

16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels;

17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Diagram 1

Framework for OWG proposed goals, UK measuring National well-being domains and Sustainable Development Goals

Six elements (Secretary General's Report)	OWG Proposed Goals (July 2014)	UK Measuring National Well-being domains		UK Sustainable Development Indicators (SDIs)	
People: to ensure healthy lives, knowledge, and the inclusion of women and children	2, 3, 4, 5, 10	Health Education & skills		2. Healthy life expectancy at birth 7. Knowledge and Skills	
			Personal well-being Our relationships		1.Social Capital 4. Social Mobility in Adulthood
Dignity: to end poverty and fight inequalities	1, 5 , 10	Personal finance		6. Poverty	
Prosperity: to grow a strong, inclusive, and transformative economy	8, 9, 5, 10	The economy Personal finance		3.Long Term Unemployment 8. GDP, GDP per head and median income	
Justice: to promote safe and peaceful societies, and strong institutions	16, 5, 10	Governance Where we live			
Planet: to protect our ecosystems for all societies and our children	6, 7, 8, 9, 11, 12, 13, 14, 15	The environment Where we live		5. Housing Provision 9. Greenhouse Gas Emissions 10. Wildlife 11. Water Use 12. Natural Resource Use	
Partnership: to catalyse global solidarity for sustainable development	17	Governance			

Diagram 2

Assessment of potential frameworks for both reporting and measuring of goals and targets against other national and international frameworks

Six elements (Secretary General's Report)	**OWG Proposed Goals** (July 2014)	**CES Sustainable development indicators** Themes (TH) Here and now (HWB) Later (Capitals: HC, NC and SC) Elsewhere (trans-boundary impact, TI)
People: to ensure healthy lives, knowledge, and the inclusion of women and children	2, 3, 4, 5, 10	TH3/HWB3 Nutrition TH4/HWB4/HC3 Health TH6/HWB6/HC2 Education TH1/HWB1 Subjective well-being TH8/HWB8 Leisure
Dignity: to end poverty and fight inequalities	1, 5, 10	TH2/HWB2/TI1 Consumption and income
Prosperity: to grow a strong, inclusive, and transformative economy	8, 9, 5, 10	TH2/HWB2/TI1 Consumption and income TH5/HWB5/HC1/TI10 Labour
Justice: to promote safe and peaceful societies, and strong institutions	16, 5, 10	TH16/HWB13/SC1 Trust TH17/HWB14/SC2/TI11 Institutions
Planet: to protect our ecosystems for all societies and our children	6, 7, 8, 9, 11, 12, 13, 14, 15	TH10/HWB10/NC3/TI7 Land and ecosystems TH11/HWB11/NC4/TI8 Water TH12/HWB12/NC5 Air quality TH13/NC6/TI9 Climate TH14/NC1/TI5 Energy resources
Partnership: to catalyse global solidarity for sustainable development	17	TH10/HWB10/NC3/TI7 Land and ecosystems TH11/HWB11/NC4/TI8 Water TH13/NC6/TI9 Climate TH14/NC1/TI5 Energy resources TH15/NC2/TI6 Non-energy resources

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Conference of European Statisticians

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Response by official statistics to the Sustainable Development Goals

Sustainable Development Goals, targets and indicators and the Conference of European Statisticians Recommendations on measuring sustainable development

Note by the UNECE Secretariat

Summary

The paper presents summary results of mapping the Sustainable Development Goals (SDGs), targets and indicators to the indicator framework of the Conference of European Statisticians (CES) *Recommendations for measuring sustainable development*. The paper also gives an overview of the pilot testing of the Recommendations in eight countries. Use of a conceptual framework can provide a coherent structure to measuring the SDGs and targets, identify interlinkages, overlaps and gaps, and facilitate the selection of indicators. The mapping also shows how the CES framework should be adjusted to provide basis for a comprehensive framework to measure SDGs.

The paper is presented for discussion to the first session of the Conference of European Statisticians' seminar "Response by official statistics to the Sustainable Development Goals".

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I. Introduction

1. The Conference of European Statisticians (CES) *Recommendations for measuring sustainable development*[1] were developed during 2009-2013 by a joint Task Force of UNECE, the Statistical Office of the European Union (Eurostat), the Organisation for Economic Co-operation and Development (OECD), and a number of countries (chaired by the Netherlands). The work followed up on the outcome of an earlier UNECE/OECD/Eurostat Working Group on the same topic in 2006-2009. **More than 60 countries from the UNECE region and beyond (including OECD member countries) and the major international organizations endorsed the CES Recommendations in June 2013** which were published in the beginning of 2014. A Russian version will be printed shortly.

2. At the time when the CES Recommendations were developed, the idea of establishing Sustainable Development Goals (SDGs) had not yet been expressed and the global political discussions about what these goals and targets would comprise had not yet taken place. The CES Recommendations aimed at defining the concept of sustainable development and developing a framework for its measurement based on the best knowledge available at the time. Therefore, when the Conference endorsed the Recommendations in 2013, it also decided that the measurement framework needs to be adjusted to the SDGs and targets once these are agreed upon.

3. It is important to note that in its report to the United Nations Statistical Commission[2], the Friends of the Chair (FOC) Group on Broader Measures of Progress stated that: "as a first step the Open Working Group targets should be mapped against each other and analysed with respect to the three dimensions of sustainable development (economic, social and environmental) and the CES Recommendations in order to identify interlinkages, overlaps and gaps." (para 13). The FOC Report further suggests to integrate the new SDG indicators into the framework presented in the CES Recommendations (para 35b).

4. Following this request, the UNECE secretariat undertook an initial mapping of the goals and targets developed by the Open Working Group to the indicators and framework presented in the CES Recommendations. The results are preliminary and would need further analysis. However, the mapping exercise provided interesting insights into SDGs and targets, and provided ideas for the architecture of an SDG measurement framework. Furthermore, the analysis shows where the CES framework needs to be adjusted to incorporate the SDG targets.

5. The paper briefly introduces the CES framework and informs about the outcome of the pilot testing of the CES framework in eight countries. Australia, Italy, Kazakhstan, Mexico, Russian Federation, Slovenia, Turkey and Ukraine participated in the pilot testing. The paper presents the main outcomes of the mapping and conclusions that can be drawn from this exercise in view of refining the CES framework in line with the proposed SDGs and targets.

[1] http://www.unece.org/stats/sustainable-development.html
[2] E/CN.3/2015/2

II. CES Recommendations on measuring sustainable development

6. The *CES Recommendations on measuring sustainable development* are a key step towards harmonising the measurement approaches to sustainable development. **The Recommendations provide countries with a universal measurement framework based on synergies between the theoretical concepts and policy needs.** The CES Recommendations show in practice how the countries could present the information on sustainable development in a concise and structured manner. During its development, the measurement frameworks of individual countries were analyzed extensively and the various international initiatives were taken into account, such as the ones by the United Nations, Eurostat and OECD.

7. The sustainable development indicator framework of the CES Recommendations links the theory to policy relevant themes. It aims to base the measurement of sustainable development on solid conceptual grounds while at the same time proposing an indicator set to respond to policy makers' needs in all areas of sustainable development covering its environmental, social and economic aspects.

8. The CES framework draws on three conceptual dimensions of wellbeing as defined in the Brundtland report: wellbeing of the present generation in one particular country (the 'here and now'); wellbeing of future generations ('later') based on the capital approach; and wellbeing of people living in other countries, which incorporates the transboundary impacts of sustainable development ('elsewhere'). These three dimensions are further linked to 20 policy relevant themes, covering environmental, social and economic aspects of sustainable development.

9. The framework can be used in a flexible way. The proposed sustainability themes are universal but there is room for selecting country-specific indicators. The CES Recommendations propose a comprehensive set **of 95 indicators selected on a thematic basis** including more detailed policy relevant indicators according to the 20 policy themes and covering the three dimensions of wellbeing (here and now, later and elsewhere). From these 95 indicators two subsets are defined: (i) **a subset of 60 indicators selected on a conceptual basis** to provide information about the three dimensions of wellbeing, and (ii) **a small set of 24 indicators** to communicate the main messages more efficiently to policymakers and the general public and that could serve for international comparison. An elaborate analysis shows that data for compiling the small set of indicators are available in many existing sustainable development indicator sets and international databases that were reviewed by the Task Force.

III. Outcome of pilot testing of the CES recommendations

10. Following the endorsement of the *CES Recommendations for measuring sustainable development*, eight countries, namely Australia, Italy, Kazakhstan, Mexico, Russian Federation, Slovenia, Turkey and Ukraine pilot tested the recommended framework and indicators in 2014.

11. In the pilot testing exercise, the countries were asked to review the set of 95 indicators, examine the indicator descriptions and see whether these indicators are used in their country. In addition, the countries were invited to match their national indicators to the CES framework and provide feedback on whether the proposed framework had been helpful in reviewing and constructing the national indicator sets. Finally, the countries were requested to identify implementation issues, in particular to analyze possible data gaps,

identify proxy indicators and suggest indicators to fill in "place holders" (indicators that are needed but not yet produced).

12. The pilot testing exercise demonstrated the usefulness of the CES framework, its flexibility and ease of application in practice. The results show that all of the participating countries produce majority of the 95 CES indicators. Australia, Italy and Russian Federation produce more than 77 per cent of the CES indicators. Mexico, Kazakhstan and Slovenia produce two thirds of the CES indicators.

13. Four of the countries (Italy, Mexico, Slovenia and Ukraine) indicated that they used the CES framework in developing their national sustainable development indicators.

14. Furthermore, the pilot testing showed that basic statistics are available to produce the CES indicators for all the policy themes included in the CES framework. One of the challenges will be, therefore, to ensure that the same basic statistics are available in all CES countries so that comparable results could be produced in assessing progress made towards SDGs and targets.

15. The pilot testing exercise was very helpful in identifying gaps in the national measures of sustainable development. It also identified some areas covered by the national sets, which are missing in the CES framework and could be added in the future. Some examples include: transport and communication, ageing, participation in sports and cultural activities, etc.

16. The main conclusions from the pilot testing are presented below:

A. Feasibility to produce some CES indicators that are currently not produced

17. Countries indicated that they have the capacity to produce certain CES indicators which are currently not produced. Furthermore, some indicators with only small differences in the method of calculation could be easily adjusted and produced, for example in cases when age groups are slightly different (employment rates, smoking prevalence, etc.).

B. Expanding national SDI sets to include more CES indicators

18. Several countries shared their plans to introduce the production of certain CES indicators in the near future. This includes, for example, in Russian Federation the indicators on leisure time, healthy life expectancy, natural capital, contacts with family and friends and participation in voluntary work; in Kazakhstan competency of adults and trust in institutions; and in Turkey expenditure on education. Furthermore, Australia explained that one of the most difficult CES indicators – the "human capital" indicator - is being produced in the country on an experimental basis.

C. Suggested indicators to fill in for the "placeholders" in the CES framework

19. The CES measurement framework is forward looking, and as such 22 of the 95 CES indicators were noted as indicators that are not yet produced but would be needed in the future. These were referred to as "placeholders".

20. The majority of "placeholders" in the CES Recommendations come from the area of environment. There are also "placeholders" in the area of housing, social capital, knowledge capital, distributional issues, migration and physical safety.

21. Piloting countries made useful suggestions to fill in the missing indicators, especially in the area of environment, housing and social capital. The countries proposed indicators from their national indicator sets for more than half of the "placeholders". Several suggestions refer to the distributional indicators on health and education.

IV. Mapping of the SDG targets and the CES framework

22. The mapping of the SDG targets and the CES framework was undertaken by the UNECE secretariat. Its main purpose was to analyse how a conceptual framework, such as the CES framework can be used to structure the SDGs, targets and their future indicators. The term 'framework' here is understood as a coherent underlying structure that allows to organize the list of indicators. SDGs and related targets are based on policy priorities agreed through political negotiations. Therefore, the resulting list of goals and targets can easily include inconsistencies, overlaps and gaps.

23. Another aim was to identify how the CES framework can be adjusted to take into account the measurement needs for SDG targets. For example, it may be necessary to improve the definition and extend the coverage of some themes, and add themes that may be missing from the CES framework.

24. The use of a framework is important to:

(a) organise the goals and targets into a coherent structure;

(b) give a broad view of the SDGs, avoiding a narrow viewpoint of a specific sector;

(c) link national, regional and global perspectives;

(d) identify inter-linkages, overlaps, gaps and trade-offs between the goals, targets and respective indicators;

(e) facilitate the selection of indicators, narrow down the list of indicators and balance the indicator system between different aspects (economic, social and environmental);

(f) facilitate communication of the indicators.

25. The mapping was based on the goals and targets proposed by the Open Working Group. The analysis also took into account the different indicator lists that have been circulated for comments: the survey by the Friends of the Chair Group on Broader Measures of Progress, the proposal by the Sustainable Development Solutions Network (SDSN) and the proposal prepared by UNSD for the discussion at the UN General Assembly negotiations on the Post-2015 Development Agenda (23-27 March 2015).

26. Although more analysis needs to be done, some conclusions can be drawn which will help to structure the measurement of the many policy issues that are incorporated in the SDG targets. The analysis can also facilitate the selection of future SDG indicators.

27. The mapping was done in two ways:

(a) Taking the CES Recommendations as a starting point and allocating the indicators to the SDG targets;

(b) Taking the SDG targets as a starting point and allocating them to the CES framework.

28. When taking the **CES framework as the starting point**, the mapping revealed that all CES indicators could be mapped to the respective SDGs and targets.

29. When taking the **SDG targets as a starting point**, the initial analysis shows that a great majority of these targets can be mapped to the CES framework. Some themes and dimensions in the CES framework may need to be extended to take into account all related aspects of the SDG targets, or new themes added.

30. For example, the CES framework includes a theme "Nutrition" as part of human well-being. This theme can be extended to include food, food security and food waste aspects. The CES framework includes a dimension "Transboundary impacts" to measure how countries impact other countries through migration, trade, financial flows, technology transfer, etc. This dimension may be extended to cover also global aspects, such as oceans (Goal 14). "Transport" and "Infrastructure" could be added as a new theme or incorporated under the theme of economic capital.

31. Some of the SDG targets are very wide, encompassing many different areas. For example, target 2.3: "by 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment" or target 4.7. "by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development". Such targets are very difficult to match and it will be a challenge to measure these targets by one indicator.

32. It is also challenging to match the targets that concern policies and means of implementation - these are mainly the targets denoted with letters, e.g. 1.b: "create sound policy frameworks, at national, regional and international levels, based on pro-poor and gender-sensitive development strategies to support accelerated investments in poverty eradication actions". It has to be decided what kind of indicators to use to measure such targets: whether to focus on the existence of specific policies, or try to measure the outcome of implementing these policies.

33. The mapping of SDGs and targets to the CES framework allowed to identify overlaps in the targets. There are quite many overlaps, especially concerning areas that are addressed under several goals, such as labour, gender, inequality, access to resources, climate change, etc.

34. With regard to cross-cutting issues, there is often a goal focusing on a particular issue, and in addition targets dealing with this issue under other goals. "Gender" is a good example this. Goal 5 of SDGs deals with gender equality. In addition, gender aspects are included in many other SDGs: such as Goal 1 "Poverty" (targets 1.2, 1.4), Goal 2 "Hunger, nutrition and food security" (targets 2.2 and 2.3), Goal 3 "Health" (target 3.1), Goal 4 "Education" (targets 4.1, 4.2, 4.3, 4.5, 4.6, 4.7), Goal 8 "Economic growth, employment and decent work" (targets 8.5 and 8.8), Goal 10 "Inequality" (targets 10.2 and 10.3), Goal 11 "Cities" (targets 11.2 and 11.7), and Goal 12 "Sustainable consumption and production".

35. "Labour" is another example: Goal 8 "Economic growth, employment and decent work" addresses employment directly. In addition, labour issues are dealt with in Goal 5 "Gender equality" (targets 5.1 and 5.4), and Goal 10 "Reduce inequality" (targets 10.2 and 10.3).

36. An overlap is not a disadvantage in itself. It shows a link between targets and can help to reduce the number of indicators when one indicator can be used to measure several targets.

V. Conclusions

37. The CES Recommendations provide an important contribution to the current process of establishing a measurement framework for SDGs and the related targets. The Recommendations are the result of several years of work by countries and international organizations, and are based on thorough review of data availability and feasibility testing.

38. A major conclusion from the pilot testing by countries and the mapping exercise by the UNECE secretariat is that the framework presented in the CES Recommendations can be used as a starting point for developing a SDG measurement framework:

(a) The CES framework and set of indicators is flexible and can be adapted to country/regional circumstances and policy priorities;

(b) The pilot testing has proved its practical usability for countries;

(c) The CES framework allows to link the goals and targets (policy themes) to conceptual dimensions of sustainable development.

39. The CES framework needs to be adapted to SDGs: the coverage of some of the dimensions can be extended and new themes could be added. Taking into account the limited time, this will be the most efficient and practical way to develop a feasible architecture for measuring SDGs and the related targets.

40. As decided by the United Nations Statistical Commission and being supported by the negotiations of the United Nations General Assembly on the Post-2015 Development Agenda, the global indicator set should be kept manageable and contain only a limited number of indicators. This leaves room for the regions and countries to develop their own indicators to complement the global set and take into account the regional and national circumstances and priorities.

41. Therefore, the way forward for the countries in the UNECE region could be to adjust the framework presented in the CES Recommendations and use it as a basis for a regional SDG monitoring system. This would build on the joint work that was done by UNECE, Eurostat, OECD and a number of countries, and endorsed by Conference of European Statisticians. A small expert group could be created by CES to adjust the CES framework in line with SDGs and targets.

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Modernization of statistical production and services and managing for efficiency

Improving data dissemination: New challenges for cohesion policy – Polish experience

Note by the Central Statistical Office of Poland

Summary

The paper presents the activities undertaken by the Central Statistical Office of Poland to develop a dissemination policy that will enhance communication with users. The office created an innovative dissemination system to take into account the needs of policymakers. The system is dedicated particularly to users interested in monitoring cohesion policy as well as national and regional development in Poland. The system provides tools for data presentation and analysis.

The paper is presented for discussion to the second session of the Conference of European Statisticians' seminar "Modernization of statistical production and services and managing for efficiency".

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I. Introduction

1. With the approval of the Lisbon Treaty the scope of cohesion policy has changed — social and economic issues have been complemented by a territorial aspect. The discussion on this topic has emphasized the role of official statistics as a data source. Official statistics are considered essential for creation as well as monitoring and evaluation of policy objectives. National statistical offices acting as producers of official statistics face the challenge of data dissemination in the 21st century.

2. The way and quality of communicating information determine the recipients' perception of socio-economic reality as well as their attitude towards official statistics. The policy of modern approach to data dissemination should be guided by usability and attractiveness of statistical products and services. Engaging designs, intuitive functionalities, interactive applications and data visualization are nowadays of utmost importance for statistical data recipients, especially for users who are not statistical experts. Effective mutual communication is a key in satisfying both data users' and producers' needs.

II. Recent advances in data dissemination

3. In response to the need of enhancing communication with users, the Central Statistical Office of Poland (CSO) not only constantly tries to implement new solutions, but also to improve existing dissemination channels. CSO created an innovative dissemination system to take into account the needs of policymakers. The system called STRATEG, is an example of the recent advances in the CSO data dissemination channels. Moreover, Geostatistics Portal and Domain Databases are another example of innovative products. The work will continue as the Local Data Bank, the richest data collection system, will undergo substantial modernization in the short-term.

A. STRATEG system

4. The Central Statistical Office of Poland, as a key partner in creating an effective system for monitoring of cohesion policy and institution establishing information standards, has taken up activities aiming at developing a forward-looking dissemination policy to enhance communication with various user groups. The STRATEG system was developed specially to take into account the needs of policymakers for evidence-based policy making and for results-oriented management.

5. The actual database and the interface of the system are both based on well-known technologies. However, the innovative character of the system lies in its focus on supporting policy making. It provides statistical indicators and visually attractive forms of data presentation. The project, financed by the European Union (EU) under the Human Capital Operational Programme, is implemented by CSO in cooperation with the Ministry of Infrastructure and Development. This project is an example of a successful collaboration of statisticians with decision-makers.

6. The main aim of the project was to create a database system which will facilitate the process of planning and monitoring of development. Collecting all indicators significant to the monitoring process of the development policy in one place allows easy access to official statistics as well as other information systems (more than 80 national and international sources). The basis of the information resources of STRATEG system is formed by indicators from strategic documents – the Europe 2020 strategy in force at the EU level, and strategic documents binding in Poland. STRATEG is also meant to function as a

system for monitoring the cohesion policy. For this purpose, indicators are being compiled in the system with a view to monitoring the strategic goals included in the Partnership Agreement for 2014-2020 as well as in the related national and regional operational programmes.

7. Apart from extensive information resources in the database, the system enables visualization of indicators in form of charts and maps, which considerably facilitates data analysis process. Visualization modules are equipped with a range of functionalities enabling the creation of various graphic forms. Apart from static visualization, it is also possible to view charts and maps in an animated form, with visible changes occurring in the subsequent years. The function enabling export and visualization for different formats makes it possible to use the system resources directly for publications or reports, which considerably improves the process of reporting on the implementation of strategic documents.

8. CSO as a creator and maintainer of the STRATEG system has decided to use it as a channel for effective communication and education in the field of statistics. Accordingly, a separate module was created within the application, named "Metadata and analyses". It collects a range of methodological information, analytical reports and statistical publications. Furthermore, detailed indicator profiles were prepared to present information on a given indicator, inter alia, its definition, overall methodological explanation, source of origin, available variables, comments on possible interpretation and usage, as well as a list of documents with targets for monitoring. For users looking for a quick and easy access to indicator metadata, a separate element with a search option was created to select and present definitions of basic terms. As an important component of statistical education, the system includes dedicated analytical information module which collects a range of analytical reports, statistical publications and short analytical comments on current socio-economic situation and trends concerning a given subject. The above mentioned functionalities, characterized by clarity, simplicity and open accessibility, constitute a significant support to analytical work.

9. Ensuring accessible and visually-appealing forms of data presentation was one of the biggest challenges when developing the system. Firstly, a review of information systems available throughout the world was conducted, including databases of international organizations, in order to identify good practices that could be applied in the new system. When determining the final structure of the system, the needs of the future users were important to consider. User dialogue was at the centre of each stage of the project implementation. Particularly important were workshops during which the trial version of the system was presented. The meetings offered a great opportunity of showing users the structure of the system and its functionalities, which allowed for constructive discussion and provision of feedback and suggestions to be considered in the project. Thus, the users had the possibility to participate in the development of the system and influence its final shape.

10. Being aware that statistical indicators gathered in the database can represent a methodological challenge, the subsequent development stages of STRATEG as a system for monitoring the cohesion policy, involved the preparation of a methodological guide. The guide will facilitate interpretation of the cohesion policy indicators. The manual serving as a guideline on key indicators for monitoring cohesion will give a general understanding, clear descriptions facilitating analysis and interpretation of statistical measures, explanation of their possible consequences or implications as well as reference to the source of information. Moreover, in the short-term STRATEG will be supplied with data from two regions of the Nomenclature of Territorial Units for Statistics (NUTS). This level of detail will facilitate socio-economic analyses of the EU regions and regional policies.

11. By creation and launch of the STRATEG system, CSO has made a step towards developing and implementing a forward-looking data dissemination policy. The STRATEG system is not only a comprehensive tool providing information on planning and monitoring of progress, but foremost a good example of an effective data dissemination and communication channel used by various user groups.

B. Geostatistics Portal

12. The Geostatistics Portal is yet another example of a modern solution of the Polish official statistics. The Portal uses Geographic Information System technology for spatial presentation of statistical data. The Portal was developed to supplement the CSO information services and to address growing users' demand for dissemination of statistical data at the most detail regional level. The main function of the Portal is to collect, present and provide information to a wide audience, including public administration, entrepreneurs, individual users and research institutions.

13. The construction and launch of the Geostatistics Portal comply with the main aim of CSO to provide statistical support for planning and monitoring of progress. The Portal was established, among other purposes, to acquire essential information for carrying out interventions at general and local government level, and to start, develop or change professional activity profile of private persons and economic entities. The Portal will facilitate monitoring of a given area, performing analyses, simulations and forecasts, estimating various risks and developing risk prevention. The project contributes to creating a complete and consistent e-Administration system. This will also support the development of entrepreneurship as it facilitates access to current information on the socio-economic situation of the country, and is, therefore, strategic for the economy.

14. The Geostatistics Portal is a tool for interactive presentation and dissemination of data with the use of choropleth maps and various types of diagram maps. The basic set of data in the Geostatistics Portal presents the results of censuses, processed in the Analytical Microdata Base (ABM). Since 2014, the Portal also allows to create thematic maps based on data from the Local Data Bank (BDL). The intuitive interface of the Geostatistics Portal gives users a quick and easy access to statistics and they can set their own visualization parameters for each statistic. Additionally, users have access to basic tools such as object identification, selection of objects on the map, locality search engine, address search engine (available for internal users) and attribute-spatial search engine. The Portal allows to print a selected area on the map or export it to a selected format.

15. The Polish official statistics is planning to expand and enhance the existing functionalities of the Geostatistics Portal. The project for the Geostatistics Portal expansion was submitted to the Programme Innovative Economy 2007-2013 (extended perspective) and the Operational Program Digital Poland 2014-2020. At present, the Geostatistics Portal allows for the presentation of the results of censuses and the Local Data Bank. Ultimately, CSO would like to allow access to spatial data obtained from other statistical surveys covered by the survey programme of official statistics. As a further part of the expansion, it is planned to implement functionalities that facilitate presentation of phenomena by other regional classifications. For example, in kilometre grids, which is specified in the implementing regulations of the infrastructure for spatial information in Europe (INSPIRE) Directive. There are also plans for modernization of searching, browsing and downloading services, as well as the centralisation of spatial data produced and maintained by the official statistics. It is worth stressing that the strength and uniqueness of the Geostatistics Portal lies in the nature of the data, held only by the official statistics services.

16. The Geostatistics Portal is an example of an innovative comprehensive solution tailored to the European standards. The system provides all interested users with a complex

source of information and knowledge, especially the representatives of public administration and other entities engaged in the process of programming development and analysis of achievements towards the implementation of development objectives.

C. Domain Databases

17. A further solution aiming to support the system of monitoring cohesion policy, implemented by the Central Statistical Office as a part of the Statistics Information System Project (SISP) 2 project, is the creation and launch of the Domain Databases. The construction of Domain Databases complies with the overriding objective of the SISP-2 project that is enhancing the role of official statistics in the state information system, through the modernization of information technology infrastructure and data dissemination channels.

18. Domain Databases, using the Analyses and Decisions Support System (SWAiD), enable access to a wide set of data provided by the official statistics, consistent with the research connected with the Program of Official Statistics. Their thematic scope covers the main information needs of statistical data users. The Domain Databases were constructed based on mutually complementary and compatible systems, i.e. statistical data warehouse, public data warehouse, statistical metadata system as well as analyses and decisions support system, which enables their flexible expansion and implementation of new products.

19. The Domain Databases provides the opportunity of statistical data visualisation in form of tables, charts and maps, as well as their download and usage for own analytical publications. Solutions used in Domain Databases, including a standardized form of reports, make user's work easier, allowing at the same time for adjustment of data to individual needs. Domain Databases allow for a simplified transition from data to information, through knowledge and finally to evidence-based decisions.

20. The Domain Database Project assumes also the launch of multidisciplinary database – mobile application adjusted for the needs of smartphone and tablet users. The application will include a set of the most recent and in demand indicators. Moreover, in order to support works of Internal Statistical Information Centres, a special database with essential news and data will be developed, which at the same time will serve as a platform for internal communication and exchange of good practices. The database allows to perform quick actions aimed at sharing the most desirable information for statistical data recipients from various thematic areas, available at the lowest possible territorial levels.

21. Despite data resources typical of digital datasets, Domain Databases ensure access to information supporting the comprehension of statistical data, including methodological explanation, additional information connected with particular areas, as well as links to recommended publications, studies and events.

D. Local Data Bank

22. As the information society develops continuously, it is necessary for statisticians to meet the expectations addressed to official statistics by various user groups. The years of improvement effort have developed the Polish official statistics into a system of comprehensive statistical information available on various regional levels. The Local Data Bank (LDB) is one of the most crucial elements of the information system of public statistics.

23. LDB is the largest systematized free-of-charge database platform that is available on-line in Poland. It provides reliable and up-to-date information on social, economic and

environmental processes in Poland for country, regional and local level. As it is possible in many other popular databases, users of the LDB are allowed to generate tables and charts. The Bank describes voivodships (NUTS 2), powiats (Local Administrative Units (LAU) level 1) and gminas (LAU 2) as elements of social and administrative organization of the country, as well as regions (NUTS 1) and subregions (NUTS 3) that are part of the classification of territorial units for statistics.

24. LDB is the most generous public database which consists of data from the following sources:

- Statistical surveys included in the Programme of Statistical Surveys of the Public Statistics, as well as results of national censuses (1996, 2002, 2010 – the National Agricultural Census; 1988, 2002, 2011 – the National Census of Population and Housing);
- Registers: REGON (National Official Business Register), TERYT (National Official Register of the Territorial Division of the Country);
- Eurostat and OECD Typology – urban and rural units;
- Administrative sources (inter alia: information systems).

25. The content of LDB is constantly updated on the basis of identification of users' needs and new data sources. The total number of variables available in LDB has reached above 41,000.

26. The LDB collects annual data (since 1995-2014) and short-term data (e.g. monthly, quarterly and half-yearly for the years 2005-2015). Bearing in mind various information demands and the diverse advancement level in operating Internet information systems by users, the Bank offers simple pre-defined comparisons and modules (Territory Portrait, Sustainable Development Indicators, All data for the locality).

27. Nowadays, new functionalities of the LDB are being developed, such as tools for the graphic data visualisation. Last year the data presentation on maps in the Geostatistics Portal was improved.

III. Conclusions

28. Effective data dissemination by official statistics is probably one of the most important factors determining user's ability to translate statistical data into knowledge. Taking into account users' needs while creating statistical products and services, the Polish official statistics give priority to activities aiming at the enhancement of forms and ways of data dissemination. Accordingly, the activities supporting data dissemination remain a key point in the CSO dissemination policy. Innovative approaches and new technological solutions to data dissemination foster better understanding of data, and at the same time could improve communication with users and thus increase use of data available.

29. The presented examples of the advances in data dissemination in CSO harness the potential of emerging technologies and explore new approaches to improve outreach by better dissemination to central and regional authorities. Data dissemination systems enhance the availability of timely and comprehensive statistics, which as a result may contribute to sound macroeconomic policies and the efficient functioning of the economy.

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Modernization of statistical production and services and managing for efficiency

From domain-oriented to process-oriented production

Note by the Statistical Office of the Republic of Slovenia

Summary

The Statistical Office of the Republic of Slovenia began to modernize statistical production some years ago by launching a large infrastructure project. The project was based on the "Generic Statistical Business Process Model" and a few cornerstone concepts which should assure development of generalised but still flexible enough solutions to cover the needs of most of the statistical surveys. Instead of creating one overall general solution for the entire statistical process, the office chose a step-by-step approach. Generalised solutions for the specific parts of the process, for example data editing, aggregation, standard estimation, will gradually be developed and introduced into statistical production. The paper describes the main concepts of the development project, presents the results achieved so far and shares the plans for further development.

The paper is presented for discussion to the first session of the Conference of European Statisticians' seminar "Modernisation of statistical production and services and managing for efficiency".

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I. Introduction

1. Implementation of statistical surveys is a demanding, time consuming and consequently quite expensive task. This is especially true in the case of surveys from the field of official statistics where the reliability of the statistical outputs is of special importance. It is undeniable that most of the official statistical surveys target very complex phenomena that are not easy to observe which makes the job of official statisticians even more demanding. With the constant pressure for budget cuts on the other hand, the official statisticians are hence more and more facing the challenge of producing the statistics of high quality with the significantly reduced resources.

2. The rapid development of information technology (IT) in recent years is offering possibilities to redesign the survey process in an entirely new and more effective way. It can be quite clearly observed that lately most national statistical offices have put a lot of effort into redesign activities at the institutional level. Terms such as re-organisation, modernisation, new architecture etc. are very frequent terms in the national statistical offices' strategic documents. The final goal that is usually stated in these documents is to use the wide range of newly developed information technology tools and applications to make the whole production cycle less burdensome and less expensive.

3. The Statistical Office of the Republic of Slovenia (hereinafter SORS) is no exception in this regard. The efforts to build a new modernised system for data processing already go several years back. Approximately ten years ago SORS started to plan modernisation of its processes with the aim to build fully integrated systems for the statistical production. The implementation of such a system did not work out as planned, so the approach gradually changed. SORS turned toward the development of several independent, generic IT solutions which would then for each particular survey be linked into the specific statistical process.

4. SORS is now carrying out a large infrastructure project with the aim to put the modernisation ideas into practice as part of the regular statistical production. Generalised solutions for the specific parts of the process, for example data editing, aggregation and standard estimation, will gradually be developed and introduced into the process of carrying out statistical surveys. The paper describes the main concepts of the development project, presents the results achieved so far and sketches the plans for further developments.

II. From fully integrated toward the modular solution

5. In 2007, SORS started a large project which aimed at creating a complex, fully integrated statistical production system that would be able to cover the whole production cycle for a vast majority of statistical surveys. This would, among other things, include a generic, metadata driven system for the whole cycle of the statistical data processing. As regards this generic system, at the end of the project SORS came to the conclusion that the results only partially met the expectations.

6. The project failed in its goal to create a fully integrated system which would link together all the particular tools that were developed throughout the project. The question that was consequently raised after the analyses of the project results was: Are such fully integrated systems really the best development orientation? In other words, do such integrated systems really assure the modernisation towards the flexible and (cost) effective statistical production system? All the discussions and considerations in the end resulted in the decision to give up the idea of a fully

integrated system and instead aim at slightly different solutions which still keep some important features of the "old system" (also called the metadata driven approach). The idea was to use a certain degree of disintegration which would contribute to larger flexibility while maintaining some generality of the system.

7. The main change in the approach was that SORS decided to break the statistical process into a set of smaller sub-processes and started to develop modular solutions for each of these sub-processes. These modular solutions should be designed in a way that they enable easy and flexible linking of inputs and outputs of the individual components to the whole statistical process. These components (also called the building blocks) should provide the generic software solutions for certain parts of the statistical production process and should be designed in a way that they can act independently. The main features of these building blocks could be summarized as follows:

(a) They are designed on the basis of harmonized, transparent and widely accepted methodological principles which have been determined before the actual creation of the particular building block;

(b) They should be opened to such extent that these building blocks can be plugged into different databases in different environments (e.g. Oracle, SAS) as long as the databases follow some basic rules for the organization of data;

(c) They are designed as fully metadata driven systems, meaning that information which determines the parameters for the execution of the processing for a specific survey and a specific reference period should be provided outside the core computer code. No information referring to specific survey execution should be incorporated into the general program code but should be provided by the subject-matter personnel through the special metadata tables;

(d) The process metadata can also be provided in different databases for each survey in different environments, but each of these (metadata) databases must follow strict rules regarding its structure (tables and variables).

8. The generic modular solutions were developed in two steps. In 2007-2010 the first version of the new generalised system was built. The focus of this initial development was to develop generic SAS based programs, which would be able to execute a particular part of the process for different surveys by not changing the SAS program itself, but just by adjusting the process metadata (process rules) which are the input into the general program. What was most important here was the significant change in the way the particular part of the statistical process was now executed.

9. Before introducing the new system, SORS applied "classical stove-pipe oriented production", where production tools and solutions were "survey-dependent". How the statistical processes (e.g. editing and imputations, sampling error estimation, statistical disclosure control and tabulation) were organized very much depended on the survey team in charge of the survey implementation. The survey-dependent approach was especially outstanding when the development of the software solutions was concerned. Software solutions were developed mostly ad-hoc for the needs of the particular survey. IT specialists used the "open instructions" of statisticians to develop the software solution and then (if needed) adjusted it for each particular implementation need when carrying out the survey. Such a system demanded a large amount of IT work at the development stage, and made the maintenance of these software solutions a very demanding job.

10. The main breakthrough that the new solutions presented was the fact that now the software solution for the particular part of the process was created only once and was then adjusted for particular implementations only through the process

metadata. These metadata are provided to the system by the survey statisticians which are now the managers of the whole system. IT specialists and general methodologists are only in the role to provide support when trouble occurs.

11. The first general solution was very flexible and open. The general programs could be plugged into different database environments for micro-data and for process metadata, if these data and metadata were organised according to the predefined rules. Such a highly generalized and open system is surely highly flexible and provides a suitable tool for building up a statistical process. However, there are also some quite obvious shortcomings of such an open system. These shortcomings are mostly connected to the process metadata management procedures. As indicated previously, the database of process metadata has a strictly determined structure, but it can for each particular survey be placed in different databases and even in different environments (e.g. Oracle, MS Access, SAS). In fact for most of the surveys the process metadata were stored inside MS Access databases. The reason for this was mainly the fact that subject-matter specialists, who are predominantly in charge of managing these metadata, prefer this environment due to its simplicity and user friendliness.

12. The problem with such a scattered system of process metadata is that it is impossible to create an effective general application for managing and controlling the inserted metadata. As it was pointed out in the analyses after the first period of the usage of the disintegrated system, the most problematic part was the significant number of errors in the process metadata. Since the fields for inserting rules are at the moment entirely open fields, most of these errors concerned the syntax of the rules (e.g. bracket errors) or errors in consistency between rules and variables.

13. To enable the creation of a better system for process metadata management and navigation, SORS decided to perform a certain degree of re-integration of the whole system. The aim of this re-integration is certainly not to build again the fully integrated system as initially designed, but to re-integrate only to such a level which would on one hand enable creation of the general management tool and on the other hand would keep the high flexibility of the system. The following re-integration actions were decided to be carried out:

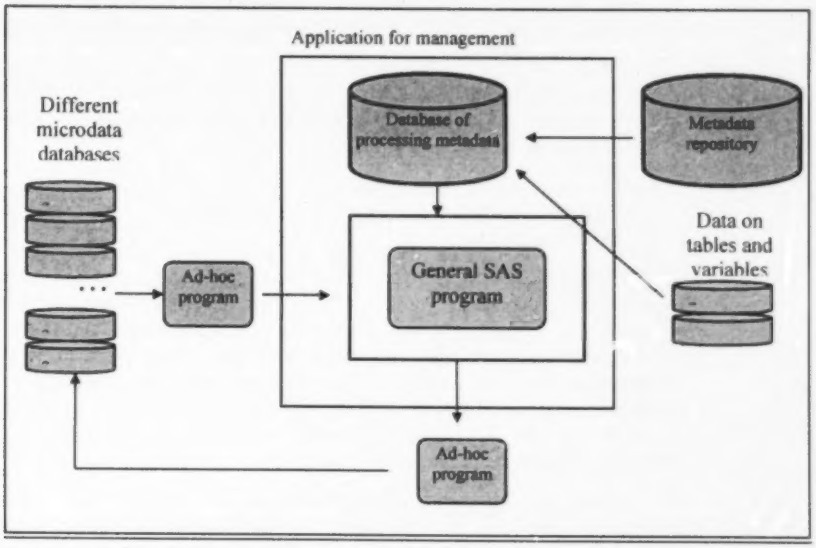
(a) To build one single, unique database of process metadata. This database would be created in Oracle and managed by the .NET application, which would enable user friendly management of the process metadata;

(b) To connect the system with the metadata repository, where the data on surveys and survey instances are stored;

(c) To enable the management application access to data on variables in incoming tables. These data can enter the application through two different channels: from the register of variables, if the survey has registered its variables there, or from some other location where the data tables structures are stored.

14. A simplified schematic presentation of the planned re-integrated system is presented in the following figure:

Figure 1
Schematic presentation of the reintegrated system



15. Development of this new system is the main subject of the large infrastructure project, mentioned at the beginning. SORS has already successfully finished the part dealing with the data validation, automated data corrections and data imputations and we are now gradually introducing this part of the application into regular production. The development of the building blocks for the data aggregation, disclosure control, standard error estimation and tabulation is also quite far. SORS is planning to start to introduce these modules into regular production at the end of this year.

III. Challenges when a totally new system is introduced

16. When the introduction of the new application started (with the very new approach) in the regular statistical production, SORS regularly collected feedback from statisticians that were faced with the new way of data processing. The main advantages and main drawbacks of the new approach, as perceived by them, can be summarised as follows.

Main advantages:

- The subject-matter personnel are much more independent of the IT department which was previously in charge of technical execution of the processes.
- The rules for the data processing can very quickly be changed through the centralised system of process metadata. This makes the whole data processing cycle much more flexible.
- Since the user can run the procedures several times in short time, it is now easier to check the feasibility of different methods for data processing.

Main drawbacks:

- In the process of the insertion of metadata there is a high risk of syntax errors. As the consequence, the application cannot be executed or is executed with the wrong parameterization.
- The subject-matter statisticians need to learn some new skills, which is sometimes a problem in the reality of the very burdensome statistical production.
- If an error occurs during the execution of the procedure, the technical staff must be contacted and if they are not available, the process execution can stop for some time.

17. Development of a totally new system for statistical production is certainly a big step forward for SORS. We firmly believe that the project outcomes will help us to build a new, modernised system for the management of statistical data processing in different statistical systems. Movement from stove-pipe to centralized methodological and IT solutions will be the final goal. The central point of the renovated system is the metadata driven application which is on one hand flexible in the sense that it can be plugged in different micro-data environments, while on the other hand it introduces a centralised management of the process metadata.

18. Introduction of such generic, metadata driven (MDD) application for data processing unavoidably introduces certain changes also at the general, institutional level when design and implementation of the statistical surveys are concerned. Based on the experiences gained so far, the main changes can be summarised as follows:

(a) There is essentially different distribution of work between subject-matter specialists, general methodologists and IT experts. With the old system, each subject-matter statistician had his or her "own programmer" and his or her "own general methodologists", who used the specific instructions of the subject-matter specialist to design and implement ad-hoc processes for a certain survey. Now the general methodologists and IT experts act only as the "support team" in case certain error in the application occurs or the process does not provide the expected results. This means that subject-matter specialists are now much more independent of the IT department and the general methodology department;

(b) Change in the role of subject-matter statisticians in the statistical process also changed expectations of their skills and capabilities. It used to be expected that they have a very deep knowledge of the subject-matter and that they are capable of providing the written instructions (in open form) for implementation of certain parts of the process (e.g. imputation, aggregation). Now they need to be trained and educated to be able to write these rules themselves already in the form of mathematical-computer language;

(c) The whole organization of work of the IT department and the general methodology department will have to be changed from domain oriented to process oriented. This re-organisation means a significantly different general view to the institution's organisation and distribution of work and is, therefore, quite a challenge for the statistical organisation. SORS is at the first stages of dealing with this challenge;

(d) The above described re-direction from (specific) domain oriented to (general) process oriented production will have to be realized also at the level of IT and methodology experts. Developing and supporting such generic applications requires experts capable of operating at a much more general level, considering the

execution of a certain survey just as one of the realisations of the general statistical process.

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